THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

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J. J. THOMAS, ASSOCIATE EDITOR, UNION SPRINGS, N. Y.

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The Cultivator & Country Gentleman.

ENGLISH AGRICULTURAL MACHINERY.

The Jury in Class IX of the International Exhibition at London, in 1862, have lately submitted their full report, drawn up by the able hand of Mr. JOHN C. MORTON, who is probably more thoroughly qualified for such a task than any one else who could have been selected for the purpose. This Ninth Class was the one embracing the Machinery of the Farm,—including (*a*) implements of tillage; (*b*) implements of carriage; (*c*) tools directly connected with the cultivation of plants, and (*d*) implements used in harvesting their produce; (*e*) the machinery of the barn, and (*f*) the tools and implements of the feeding house and dairy. It constitutes thus *par excellence*, the Agricultural Department of the Great Exhibition, and the foregoing classification could not well be more complete, —embracing, as Mr. Morton's report remarks, "the plow, the cultivator, the harrow and the roller, in the first class; carts and wagons in the second; sowing machines, whether of manure or seed, and horse hoes in the third; reaping and mowing machines, hay tedders and horse rakes in the fourth class; thrashing machinery, winnowers, corn-separators, weighing machines, &c., in the fifth class; and corn and cake crushers, flour mills, turnip-cutters and pulpers, chaff-cutters, steaming and cooking apparatus, churns, cheese-making apparatus, and dairy utensils in the sixth class,"—all of which implements, directly connected with the management of the farm and its crops, were represented at the Exhibition.

It was considered impossible by the Jury who acted in this Department, to give detailed illustrations and specifications of the advance which agricultural machinery was proven to have undergone during the eleven years since the preceding "World's Fair" at London in 1851. But Mr. Morton introduces the report by briefly noticing "four particulars in which that progress has been so marked, that some reference to them is unavoidable." These particulars are of almost as great interest to the American as they are to the English farmer, and we therefore propose to give below the portion of the report referring to them, somewhat condensed by the omission of details irrelevant to its general bearing.

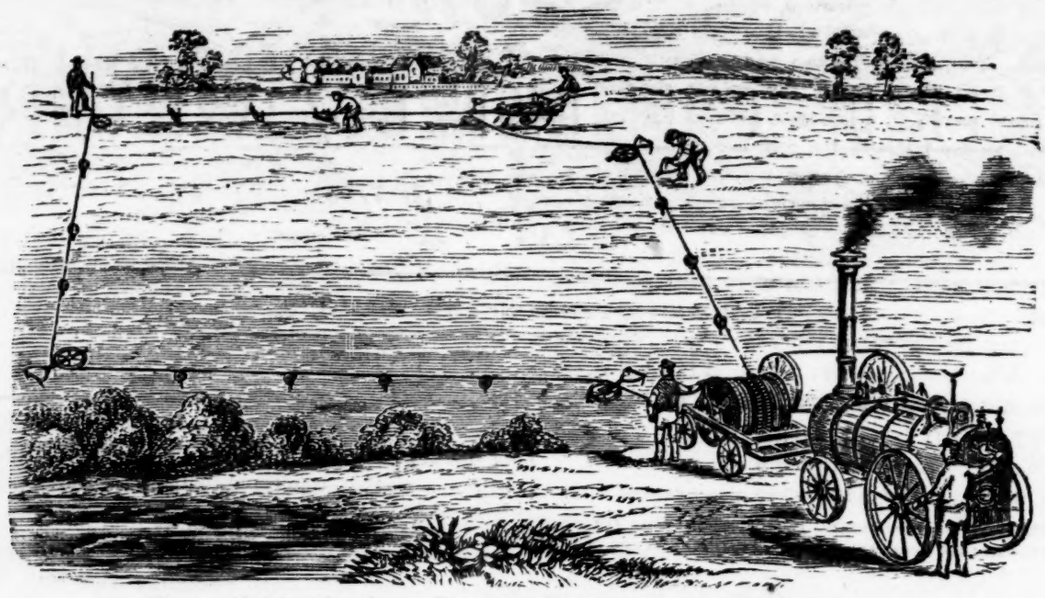
1. Portable Steam Power.

One of the most prominent features in the advancement of English agricultural machinery since 1851, says Mr. MORTON, "is the immensely increased use of the movable steam-engine. Although the fixed steam-engine had been long employed for thrashing corn in some districts of the country, it was not till, with its boiler and its furnace it was placed on wheels, that steam power came into general use in England for this purpose." The rapidity with which its use has extended, is illustrated by the statement that a single firm, (Messrs. Clayton & Shuttleworth of Lincoln,) who sold in 1852, 243 movable engines, aggregating 1,349 horse power, now find a market annually for more than double that number of engines representing a triple aggregate power. While this increased demand includes large foreign as well as domestic sales, "it also represents a very great alteration in the whole style and character of one very important department of English farm management. * * * The work of thrashing corn may now be said to be done in England almost entirely by steam power. Since the date of the previous International Exhibition here, the use of the flail has been gradually disappearing, and with the flail the whole character of the winter employment of a large body of agricultural laborers has changed; barns are disappearing, and other parts of our homesteads and farm buildings are partaking of the alteration."

In connection with the above it may be remarked, that a similarly increased use of Portable Steam Engines may be eventually anticipated in this country. Since 1850 the use of threshing machines driven by horse power has displaced the flail here almost if not quite as completely as steam machinery has done so in England. But we look forward to a time as not far distant, when steam will prove more economical than horse power, in our largest grain growing regions; if indeed, where farming is conducted upon the largest scale and in the most thorough manner, such is not already the case. There are Portable Engines now made in this country (for example, the compact and serviceable engines of Wood & Mann of Utica,) which we should be glad to have had shown at the London Exhibition; for, if the important considerations of simplicity, effectiveness and *price*, are taken into account, they would compare to advantage we have no doubt, with any machinery of English make, although superior in elegance of finish and weight of parts.

2. Steam Plows and Cultivators.

"It has contributed," Mr. Morton next remarks, "and



Steam Cultivation by a Portable Engine, on Howard's System.

will still more contribute, to increase the manufacture and employment of movable steam engines, and especially those of extra power, that within the last few years the cultivation of the land has been successfully effected by steam power. Of this nothing like a certain promise existed in 1851, though long before that time the problem had occupied the minds of sanguine men.

"Steam plows and cultivators constitute one of the leading features of the agricultural section of the Exhibition of 1862. Mr. Fowler, of Leeds (2115), exhibits his 14-horse power engine, which travels along a headland, while from it around a horizontal pulley underneath, a wire rope extends to the other end of the field, there embracing a corresponding horizontal pulley underneath a low carriage on sharp wheels, which, sinking into the ground, constitutes an anchorage against a lateral pull. The pulley under the engine has movable rims which grip the rope tightly wrapped around it; and so, as the engine works this pulley, it draws the rope to and fro around the anchor pulley. The engine travels along its headland, and the anchorage travels along the opposite headland, and the rope, drawn to and fro between them, drags as a link in its length a framework of plows and cultivators, which thus turn over or stir the land in their course. Mr. Howard of Bedford (2131), exhibits an ordinary thrashing steam engine, which he uses for cultivation in the manner adopted by Mr. W. Smith of Woolston, Buckinghamshire. He stations it in a corner of the field that is to be cultivated; by it he works a double windlass, one barrel of which winds up a wire rope, while the other lets it off alternately, and thus this wire rope is drawn to and fro around pulleys stationed in the corners of the field that is being worked. As a link in this rope, a three or five tined grubber, or, as in Mr. Fowler's apparatus, a plowing machine, is placed; it is thus drawn to and fro from end to end of the field, and so breaks up the stubble or unplowed land on which it works."

The above two methods of accomplishing Steam Cultivation were the only ones completely represented, and they are the only ones which have stood the test of actual practice. "Both," says the report, "are now unquestionably agricultural successes, and are receiving rapid adoption throughout the country."

The importance of Steam Plowing to the American farmer at the West, especially, cannot be doubted, and can scarcely be overrated. And we cannot too frequently call the attention of our experimentors and inventors in this line, to the leading fact, that if the successful experience of English manufacturers is worth anything to us at all, it is in the ample demonstration it affords of these two points—first, that *traction engines* cannot be made to plow, and, second, that effort can be made with reasonable promise of success, in the direction of a simpler and yet equally effective apparatus than the English have yet devised, for carrying the plow through the field by the agency of a *portable engine on the headland.*

3. Reaping and Mowing Machines.

In copying from Mr. Morton's report what is said on this subject, we *italicise* the official recognition it contains of the importance of these American inventions in Great Britain. "The third feature," he remarks, "in which our agriculture in 1862 entirely differs from that of 1851, though really originating long before that time, *may be said practically to have arisen then, and to be one of the results for which we have to thank the first Great International Exhibition.* Reaping and mowing by machinery are now generally practised, *and for this we are indebted to the American exhibitors of eleven years ago.* Hussey's and McCormick's machines, then first shown in England—and Bell's reaper, which had for many years previously been annually used by the brother of its inventor on his farm in Scotland—have, since then, in the hands of Cuthbert and many other makers, Burgess & Key, and Crosskill, respectively, been greatly improved and adapted to the circumstances of English crops; and machines, especially on the 'Hussey' principle, have been introduced by Cranston and by Burgess & Key for mowing grass. *There is now no large arable district in the country where the reaping machine is not employed, nor any extensive district of pasture land where the mower is not at work.* In some counties most of the reaping is now done by machinery, and the practice is every year extending."

4. Root Pulpers.

The employment of machinery for *pulping* the food of live stock, is the fourth and last of the items in mechanical advancement to which this report refers—that is, machines which do not, "as hitherto, merely cut into slices or finger-shaped pieces the turnips and mangel-wurzels given to sheep and cattle, but reduce them to a

state of thorough comminution, so that when mixed with chaff of hay or straw, the whole should rapidly ferment or heat. The process has two advantages; it mixes up, past all power of separation, the various qualities of hay and straw employed, which are thus uniformly interpenetrated with the juices of the root thus mixed with them, and so there is now no power, nor indeed any desire in the feeding animal to select certain parts and waste others, which is continually seen when they are fed on long hay; and it also, by the fermentation which ensues, subjects the food thus prepared to a sort of preliminary digestion, which is found to be of great use in the fattening process."

Beyond the four points above mentioned, English agricultural machinery remains very much as it was eleven years ago. Some slight modifications are noted in the following extract:

Implements of Tillage, excepting the steam plow and steam cultivator, remain pretty much as they were. Plows are not essentially different. Harrows remain nearly unaltered, the only exception to this being the use of the chain harrow—a surface of interlaced quadrangular four inch links of iron, which drawn over the land, is found efficiently to break down the smaller clods and cover seed, or evenly distribute manure upon grass land. Rollers exhibit in many forms the principle which ten years ago was the exclusive and patented peculiarity of one, viz., Crosskill's clod-crusher. Grubbers and cultivators and broadshares have not materially changed in ten years, though Bentall, Coleman, Clay, &c., each make implements of this class which were then unknown.

Machines of Carriage.—Carts and wagons are pretty much what they were.

Tools Employed in the Cultivation of Plants.—Sowing-machines and horse-hoes do not materially differ from the best of those of ten years ago. We have now, however, the water-drill, which we had not then, a machine which not only deposits seeds and manure, but washes them into the ground, and thus prepares an artificially moistened seed-bed, where they shall sprout in spite of drouth. And we have in the turnip field, but merely as an exceptional curiosity, the revolving horse-hoe, by which rows of young plants are bunched out to facilitate their being afterwards singled out by hand hoes. All the principal machines of this class exhibited here, though certainly improved in parts and in details, are, however essentially the same as they were in 1851.

In Harvest Machinery.—As already said, a great advance has been made. Besides, however, the reaper and the mower, there are in this class the hay-tedder and horse-rake, in which the improvement effected has been nearly of the kind just named—one of detail of construction, involving nothing essentially new. Perhaps the straw-weaving machine of Messrs. Maggs & Hindley, of Bourton, Dorset (2148), for preparing a fabric of straw which may at once be laid as thatch upon the rick should be named in his class as a successful introduction of the last few years.

The Machinery of the Barn.—Including thrashing machines, winnowers, corn and cake crushers, weighing machines, mills, &c., certainly have exhibited great improvement of late years—but here, too, it is one of parts and of details. The movable thrashing machine is much more efficient and compendious than it was, and it includes many new devices for shaking the corn and straw apart, and for lifting the former and its chaff from one part of the machine to another, and even for lifting the latter to the rick. The grain, too, is turned out from it, weighed and sorted, and thoroughly cleaned and ready for market; but here, too, the alterations are of construction and detail.

The Tools of the Feeding House.—Include the pulper, to which reference has already been made. Beyond this, no entire novelty occurs in this class of tools.

In the Dairy.—We have cheese-making machines, by Keevil and by Cockey, in which the separation of the curd and whey is effected by a uniform and systematic process, instead of being dependent on the irregular movements of the dairy-maid; and hand presses for squeezing butter dry are exhibited by Messrs. Hancock (2124.) Otherwise no novelty of any important kind is exhibited here in that section of Class IX. which belongs to the United Kingdom.

GETTING THE QUACK OUT.

Couch, or quack grass, which A. Van Voast mentions in the Co. Gent. of May 7, I suppose to be the same as is usually called dog grass in this vicinity. It may be got rid of with very little cost more than the loss of the use of the land for one year, in two ways: First, take a few posts and rails, fence off a piece of the infested ground, turn in as many good *working* hogs as one chances to have; then take a crowbar, having made a few holes with it, put a little corn in the holes, at the same time scattering some on the ground. The hogs will root after the corn, and will eat the corn and grass roots together. The more there is of it, the better for the hogs, as they will root the land over until the whole of the grass is killed. When another piece can be dealt with in the same manner.

The other way is to plow well two or three times in the course of a season, sowing salt freely upon the land. Of course no crop need be expected if either course is taken, but the next year an abundant one can be had without any manuring, nor is the land in *bad* condition for grass for a series of years.

These methods have both been tried by an old friend of mine in the south part of this State, on a piece of land from which he could get no crop at all, it was so badly infested with quack grass, but he has not been troubled with it since on this field.

West Boylston, Mass, May 16, 1863. BROOKS.

To Kill Lice on Young Chickens or Turkeys.

Take of any oil that one happens to have on hand 3 parts and one part kerosene oil—shake well together; apply as follows: Take the young chickens or turkeys when about twenty-four to forty-eight hours old—just at night is the best time; hold the chicken in one hand, while the oil is applied with a finger of the other hand to the head of the chicken, being careful not to get the oil into the eye, although it would do no farther harm than to make the chicken feel a little uncomfortable for a few minutes. The application at the above mentioned age, and again, if needed, at about one month old, will prevent lice troubling chickens. To tell whether a chicken is lousy, observe whether it is more fond, than usual, of being brooded by the hen, whether its wings droop or seem to grow faster than its body. These are sure signs that lice are eating away the life of the chicken, and it will die in a few days unless attended to at once.

Should the nests where hens incubate become infected with lice, take kerosene oil and an old brush or a bit of cloth, and apply the oil freely to the wood work of the nests. There will be no lice alive about those nests again for weeks. If hens get very lousy, kerosene oil reduced one half may be applied to the head, neck and rump of the fowl; two applications one week apart will kill all; but if fine loam, 3 parts, and ashes one part, are kept where the hens can wallow in it, they will not be troubled again with lice, although the hen house should not be renovated with whitewash oftener than once a year. The free use of kerosene oil in a henery will prevent all trouble from lice, as they will not stay where its pungent odor is.

Can you or any of your readers tell me where I can get a dozen eggs of the *pure* White Dorking breed? Should prefer to get them as near home as they can be found, as eggs that are jarred much in transportation are not as likely to hatch as well. Brooks.

West Boylston, Mass., May 11, 1863.

THE TRUE CAUSE OF THE POTATO DISEASE---Can it be Cured?*

BY PROF. S. W. JOHNSON.

That the Potato disease is as ancient as the potato itself, there can be no reasonable doubt. We have no exact observations as to the occurrence of the potato fungus (Peronospora) in the native land of the tuber; and the climate is such as to be on the whole unfavorable to the development of the fungus, being elevated, airy, and of equable temperature; nevertheless many accounts have come to us which indicate that the rot is by no means unknown on the Cordilleran table-lands. The Jesuit Joseph Acosta observed in Peru in 1571, that the tubers of the potato often spoiled in the earth, during or after cold bad weather, from "blight or mildew." Payen, in the Proceedings of the Paris Academy, mentions that according to communications made by Mons. Goudot, a disease prevailed in the Cordilleras, which if not identical with, had the greatest resemblance to the tuber-rot of Europe and North America. Boussingault sent to the Paris Academy in 1845 a letter from Bogota, in which was stated that on the table-lands of that vicinity the potato *spoiled in moist situations every year, and in wet seasons spoiled everywhere.*

Similar statements indicate that the disease was locally known in Europe before 1845. Harting, in Holland, v. Martins, in Bavaria, and other trustworthy observers, saw and describe the Peronospora in 1842. In Alsace, a malady corresponding to the potato rot was observed in 1816; the same happened in the neighborhood of Orleans, France, in 1829. Finally, in a treatise on the potato, written by Ludwig in 1770, but 50 years after the field culture of this tuber had become extensive in Germany, and 10 years before its introduction into France, occurs the description of a malady or "visible blight" which attacked the tubers, and could be seen on paring the potato, as a brown or black discoloration. It is thus probable that the potato fungus was imported with the potato into Europe and North America, and is the universally existing cause of the disease. The epidemic form which it has assumed of late years, is due to the wide-spread presence of the conditions favorable to its rapid multiplication, and in no small degree to the fact that the culture of the potato had been immensely extended for a number of years previous to the appearance of the epidemic.

The cure can only be accomplished by destroying the cause. It would appear, so universal has the disease become, that to remove the cause—to extirpate the fungus—is an impossibility, and really we are compelled to believe that such is practically the fact. At the same time, a knowledge of the habits of the fungus, may enable us in most cases to avoid the rot to a good degree.

The grape fungus *Oidium Tuckeri* and other forms of mildew are subdued by sprinkling with sulphur. These fungi however grow on the *surfaces* of the plants they injure. Since the potato fungus penetrates the interior tissues of the whole potato plant, it is doubtful if any effectual means of poisoning it without doing injury to the potato, will ever be discovered. Mowing off the tops of the potato when they show symptoms of blight has in many cases saved the tubers. In other cases it has failed, because a crop of the fungus spores has notwithstanding penetrated the soil to the tubers. Doubtless the removal of the tops from the field altogether, in the early stages of the blight might be effectual in cases where simple mowing would not answer. Deep-planting is remedial if not in all cases a remedy. It operates by putting the tuber below the reach of the spores that fall on the ground from the blighted foliage. We observe that deep-lying potatoes are often sound, when those above are decayed. We should hence expect to find that such varieties of the potato as naturally issue the root-stocks and tuber-buds deep in the soil, would be less liable to rot than the shallow-rooted kinds. Deep planting cannot be expected to prove an entire cure in all cases, since no reason is manifest why the fungus should not travel down to the tubers through the root-stalks. Again, potatoes if planted too deep do not sprout readily, and consequently make a feeble growth. The buds of the potato tuber, like the germ of a seed, cannot make an iota of progress in development, without the constant co-operation of oxygen gas. If the supply of this indispensable agent is cut off, they perish; if it be furnished them in insufficient quantity, they grow slowly, and the process of growth is easily checked and converted into one of decay. The German peasant has a saying, that "potatoes must be planted so as to hear the wind blow." Potatoes sprout best when covered but two or three inches, if the covering be soil.

Dr. Kuhn (now Professor of Agriculture in the University of Halle in Prussia, formerly director of large estates in Germany, and author of a valued work on the diseases of agricultural plants, has for many years employed the following mode of culture with success: The potatoes at planting, are covered lightly two or three inches, and without raising the ground over them. *So soon as the tops begin to appear* above the surface, the soil is thrown over them loosely, and as deeply as possible, by a shovel-plow or other suitable instrument. A light wooden harrow is now made to traverse the ridges lengthwise, so as to break down clods and fill up cavities, but not to reduce the height of the ridges much. In a few days the sprouts appear again with renewed vigor, and the cultivation is then continued as usual to the end of the season. It is important that the sprouts should be covered before they get much above ground, otherwise they turn yellow and suffer. It is *stems* and not leaves that must be buried. This method is not practicable on heavy, tenacious soil, but may be employed on all lands that are well adapted to potato culture. It is well known that hilling the potato increases the crop, for the reason that the tubers are produced on stalks which issue from that part of the stem which is between the surface of the ground and the true roots. The longer the vertical subterranean stem is, then the more numerous will be the tubers formed.

The French gardener, Hardy, has proposed a method to destroy the fungus, (which he supposed, but did not prove to cause the disease,) that has been much advocated in the south of England. The potatoes are planted as usual, and, as soon as the blight appears, the tops are pressed over with a roller, and kept flat. His idea was that by this treatment spores would be washed off the plant by the rain and rendered innocuous. It is found that while potatoes thus treated are not entirely saved, they are generally less, and sometimes far less, damaged than when the rolling is neglected. The obvious explanation is that the spores that are carried by rains from the tops into the ground, mostly, or in a great degree penetrate the soil *between* the rows, and thus come less into contact with the tubers.

Still more efficacious is the method of Hornsey, which

* Continued from page 157.

consists in laying off the potato tops, half right and half left, along the rows and throwing soil upon the ridge among the stems and roots. If the potatoes are well hilled up and treated in this manner, in most cases a great saving may be expected, according to the testimony of English farmers who have employed it.

Short's method, consisting in trodding down the stems and covering them 6 inches deep with soil, is not only too expensive for general use, but has not proved specially efficacious, for if the covering is done early, the potatoes, though they remain sound, are small and unripe, while if done late, the stems decay rapidly under such a cover of soil, and develop so much heat and moisture that the fungus multiplies extraordinarily, and the rot so far from being checked is greatly aggravated.

Prof. Bollmann of St. Petersburg, proceeding from the conviction that the cause of the disease goes into the field with the seed tuber, proposed to destroy that cause by heat. He directed to dry the tubers by artificial heat until they had shrunken together and lost a good share of their moisture. This method in his hands, and in the hands of others, has succeeded in some cases; in others it has failed. It deserves more careful and extensive trial. The failures that have been observed in attempting to test this method may easily be accounted for without supposing that the method itself is a failure. It appears highly probable that the spores of the fungus might be destroyed by a *dryness* that would not damage the potato bud. Artificial drying, however, would likely be conducted at too great a temperature, such as to destroy some of the potato germs. The potato should be cut into small pieces, with one eye to each, and then allowed to dry perferably at a low or only moderately high temperature, until they are hard and brittle.*

Mr. Holland (Sussex county, England) cultivates the potato in the following manner: The land was dunged in autumn, plowed again on a mild day in winter, and furrowed at planting time, at distances of 30 inches, as deeply as possible, in a northeast and southwest direction. On the ridges thus thrown up a furrow 8 inches deep is made and the potatoes are dropped at distances of six inches; they are then covered with the finest, lightest earth to be had. Twice monthly the soil is hilled up against the potatoes. When the blight manifests itself, its progress is carefully watched, and as soon as it has attacked the main stem, all leaves are stripped off and the diseased stems are also removed, the plants being left, either to dry away or send out shoots as the case may be.

The skillful and intelligent farmer will begin with the seed potatoes, and be sure that no diseased ones go into his field at spring time. If the stock of seed on hand is diseased, the potatoes should be cut, each one carefully examined, and all diseased pieces rejected. If cut a month before wanted, all the better. The soil should be well drained, rather light, and not freshly dunged with fermentable substances. A high, airy locality is preferable. Cover the shoots several inches deep, as soon as they show themselves, and if the disease comes on violently, cut off the tops, unless the promise of succeeding dry weather is such as to make that trouble unnecessary by checking the development of the fungus. It would be well to give the plants a good deal of room, so that the stems and lower foliage may be reached by the wind, and thus kept from excess of moisture. If the blight shows itself but moderately, bend the tops away so as to leave the ridge uncovered. In hilling up avoid gathering the stems into a close bundle, but separate them, earthing *among* them as well as around them.

By these precautions based on the fungus theory, we may hope, in the larger share of instances—in all cases, indeed, save where fatility of situation or weather are against us—to raise fair crops of fairly sound potatoes.

Sheffield Laboratory, New-Haven, May, 1863.

* The practice of an extensive Potato grower and close observer in this State, may be noted as in some measure corroborative of these suggestions from Prof. BOLLMANN. Hon. A. B. DICKINSON informed us, in visiting his farm in Steuben county, 5 or 6 years ago, that it was his uniform system not only to cut the potato into small thin pieces with one, or at most two eyes in each, as above recommended, but to allow of their becoming quite dry by exposure to the atmosphere, and as a farther preventive of rot by affording additional protection against moisture, to coat the cut potatoes with a thin covering of tar and plaster before planting. (See Co. GENT., August 20, 1857.)

The careful reading of these valuable articles of Prof. JOHNSON'S, we may add, can hardly fail to recall very much in support of the Fungus theory, in the common experience of the farm; and we are glad to know they have been received with the attention they deserve not only here, but also through the medium of the agricultural journals of Great Britain, into which they have been copied. EDS. COUNTRY GENTLEMAN.

SCYTHE SNATHS.

MESSRS. EDITORS—I have a complaint to make against the scythe-snath makers. I make it in behalf of all interested.

They make the "heel-rings" for their snaths of limber iron, and much too slender for answering the intended purpose, viz., of fastening the scythe firmly to the snath. The driving of the wedge to fasten the scythe, causes the ring to become oval in form, and to pinch the wood at the sides of the "spot." This makes necessary the use of a hammer, in moving the ring backwards and forwards on the snath, which makes bad worse, as it bruises the edges of the ring, causing the wood at that part of the stick to chafe and wear away, so much so, indeed, as often to induce the use of wooden wedges and spike nails, driven in to fill up the ring and prevent it being strained still more out of form. I have noticed many of these rings which were less than one and one-fourth inches wide at the widest part, and did not weigh more than three and a half ounces, whereas one should weigh from five to six ounces.

A ring, to be substantial, should be made of stiff, strong iron, and should be two inches wide at the widest part, and seven-eighths of an inch wide at the narrowest part; one-eighth of an inch thick in the middle of the widest part, and three-eighths of an inch thick in the middle of the narrowest part, having its edges thinned so as to give it a round form on the out-side, like the rounded hoop of a cask. This thickness of the middle, braces against the strain of the wedge, and is economy of material for producing stiffness; instance the stiffness of the ribs of man or beast.

The heel-wedge should be two inches in length, one-half inch wide, and one-fourth inch thick near the head. In driving or loosening the wedge, it is best to use a piece of iron or steel, about six inches long, one inch wide, and one-half inch thick, for a "driver," plying one end against the head of the wedge, and using the hammer on the other end—as the cooper drives his hoops on the cask. The heel-ring should be moved backwards and forwards on the snath with the hand, never with the hammer.

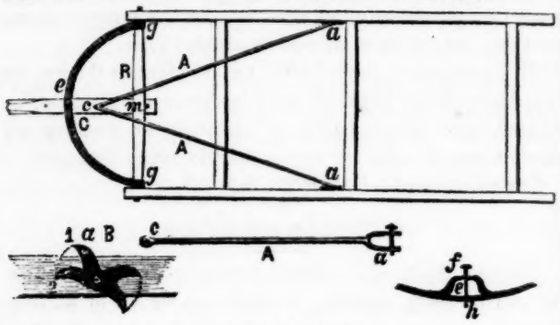
Now, lest some patent-right pedler should inquire why I don't use some patent fixture for fastening the scythe to the snath, instead of the "ring" and wedge, I would say that I have never found anything their equal, when properly made—they being simple, safe, cheap, and durable. They will last more than a life-time, if taken care of, and not allowed to "rust out," instead of "wear out."

Bethlehem, N. Y., May, 1863. AMOS FISH.

SELF-ACTING SLED BRAKE.

MESSRS. EDITORS—I notice in the Co. GENT. an inquiry concerning a brake for a sled. By your response I perceive that you are not familiar with one that has been in use in this neighborhood for the past two or three winters. It is really a valuable invention, though I believe not patented.

If by the accompanying sketch and description I can clearly convey to you an idea of its manner of working, you are at liberty to publish them. A tenon is cut on the back end of the tongue about 6 inches long, permitting it to play freely in the roller R, at m. The brace C, is made of a bar of iron 1½ inches broad, and ½ inch thick, bent edgewise in a semi-circular form, with the band, (made of



A. Rod fastened to tongue at c. and dog at a.
B. Dog fastened to runner by bolt b. 1 shows its position when going down a hill. 2 when the load has to be drawn.
C. Brace through which tongue slides at e. and against which bolt through whiffle trees and tongue draws at f. and h.

the same sized iron,) through which the tongue passes at e, welded to the upper side of the brace; the ends are made fast to the ends of the roller at g. g. The sled is drawn by this brace; the tongue is protected on the sides where it passes through the band by iron plates. The dogs B, one for each runner, are fastened loosely by a strong bolt passing through the runner. The connecting rods are fastened to the upper part of the dogs at a. a., and to the tongue by a bolt passing down through both and the tongue at C.

In going down a hill the tongue slides back through the band e. and the mortice m., pushing the connecting rod backwards, which in turn push the upper ends of the dogs upwards and backwards, causing the lower ends of the dogs to move downwards about two inches below the runner scraping in the snow, effectually braking the sled and checking its progress. In drawing, the whiffle tree bolt passes sufficiently far through the tongue to draw against the edges of the band and brace at f. and h. To back the sleigh, a short bolt is inserted in a hole (d.) through the tenon, so placed that when the tongue is drawn forward it will be just in front of the roller; this bolt pressing against the roller prevents the tongue sliding back and working the brake. Of course this bolt must be taken out when the brake is to be used, and replaced when it is required to back the sleigh.

In putting one of these on a sled, the upper part of the tongue at C., must be blocked up enough so that the connecting rods will not touch the roller when the end of the tongue rests on the ground, or they will be bent and very much weakened. Neither must the upper part of the dogs be made so long or be so placed that when the tongue is raised the rods will touch the under side of the forward bench of the sleigh.

I have known a team of two horses weighing about 1,000 pounds each, to draw 1½ cords of wood at a load, on roads where they had to go down steep hills. The wood was loaded on a bob sled with a brake of this kind kept in good order. This brake is almost perfect for drawing heavy loads on a bob sled. It may be put on any sled for from $5 to $7. It is the best for a large common sled that I know of. Sometimes in going over a waterbreak or dusinberry in the road, with a long sled, if the dog is not properly shaped the lower end of it will strike the road in such a manner as to split the runner where the bolt b. passes through it.

If I have succeeded in clearly describing this break, I have partly paid the debt I owe to many of your correspondents. WILLIAM BARNES. *Newburgh, March* 31.

Management of Meadows—Spreading Manure.

MESSRS. EDITORS—I fully agree with your correspondent A. B. DICKINSON, on page 250 Co. GENT., upon the subject of the management of meadows. Rolling meadows just at the right time is often a very difficult matter. If the ground is *wet*, or wet enough to pack, it injures the meadows far more than it benefits them, unless the soil is of a sandy or gravelly nature. And if very *dry*, it does them little or no good. The better way, I think, is to fit the ground *before seeding*, so that it shall have a fine, smooth surface, all obstructions to the mower being removed, and then sow on a liberal quantity of grass seed, and roll it in, when the ground is so dry it will not *pack* but *crumble*. Enough grass seed should be sown to give the meadows a smooth, even sod—the grass not standing in stools—so that when lifted by the frost, it will settle back to its original smooth surface in the spring. One great agricultural sin of which I think my brethren guilty—some of them—is the parsimonious way they have of sowing grass seed. The consequence of thin seeding is, the grass stands in clumps or stools, only a part of the ground being occupied, unless it be by weeds or thistles; and the freezing process tips these stools out of the ground, some lying sideways, and others bottom side up, and in the spring such meadows have a shockingly rough look, and at foddering time—to the eaters thereof—a shockingly *coarse*, light crop of hay.

Now to roll these meadows, for the purpose of getting the roots of the grass back into the ground again, the work must be done when the ground is *soft*, or it will be labor in vain. Of two evils, I should choose the least, and keep the roller off from the meadows. Formerly I practiced rolling meadows, but became satisfied that I had got the wrong ball in motion, and abandoned it. I think it often injures the crop of grass if the rolling is done when the ground is soft and dry weather follows, and that the soil is injured by rolling when wet, I have no doubt. The better way, I think, is to sow enough grass seed to get a close compact sod, on a fine, smooth seed bed, and in the spring let it settle by the action of the rains. If in seeding the "catch" fails to be a good one, in September scatter on a little more seed, and a little fine manure, to make sure that the whole surface be covered with grass.

Spreading manure on meadows or elsewhere, is, according to my notion, a rather *nice job*. At any rate, I have found it very difficult to get this work done, as I think it should be done, by hired help; not one man in twenty knows how to spread manure. Many seem to think—not only hired help, but others also,—that it makes little or no difference whether manure is put in shovelfulls in a place, at intervals of three feet or so, or in lumps of any imaginable size, or whether it is broken fine and spread evenly over the ground. I never could succeed in spreading manure by the harrow; this implement will mix it with the soil, but it is left in about the same place, and in about the same condition, it was in when it fell from the fork of the spreader.

No kind of farm work has caused me more vexation, than that of spreading manure. I once had a ten-acre lot plowed in the fall, upon which I sowed barley the following spring. In March I drew 30 loads of fine, well-rotted manure on to one-half the ground, and dropped it in piles, to be spread just before working the ground for sowing. I had a gentleman from the Emerald Isle in my employ, and at the proper time set Pat to spreading the manure. I gave him particular directions to spread it evenly over the ground, and break the lumps, if there should be any; and not only so, but fearing he might not do the work to my liking, I went with him to the field,

with shovel and fork, and spread a few piles as a pattern for him to follow; told him expressly to use the *shovel*, after he had spread all he could conveniently with the fork, and to scrape the ground clean of manure where the piles lay. "Indade, Sir," said Pat, "an it's me that larnth how to spread manure in the ould cunthry." Hoping he might be an adept, though having some misgivings, I left him, and did not go to the field again until the next morning, when he told me he had nearly *finished* spreading the manure. I did not think it possible, but on going to the field found it was even so—it was nearly finished. But how had the work been done? Why, Pat had followed the pattern set him, as near as Pat is capable of imitating, in the spreading of three or four piles; but he did not find it "convanient" to use the *shovel*, and had spread or rather *raked* the piles to pieces with the fork, leaving nine-tenths of the manure in the immediate vicinity of the piles, and in such a shape that it could not be re-spread to advantage. Being slow to wrath, I said but little, but thought and felt the more. It would be hardly worth while, however, to record my mental exercises, just then, in the COUNTRY GENTLEMAN.

Now, notwithstanding the ground was cultivated both ways before the seed was sown, and dragged both ways after sowing, the manure *did not* get spread. The field, while the crop was growing had the appearance of artificial mounds where the manure was applied—the barley growing very tall and rank from the center of the piles, and gradually tapering off as it receded from the centre. And the next season these spots were plain to be seen in the growth of the crop then on the ground, notwithstanding the plowing and dragging for that crop.

I think manure should be broken fine, and spread evenly by the *fork or shovel*, and not trust to some other agent to do this work. J. L. R. *Jefferson Co., N. Y.*

LETTER FROM CALIFORNIA.

EDS. CO. GENT.—There is a large tract of alluvial land lying about fifteen miles below this ranch, invaluable for cultivation, made from the washing down of the mountains and hills a long distance above. To all appearance, this section of country was once a lake of water, as now on the rear there are three lakes, viz., Kern, Buenavista, and Tulare Lake. This tract is some twenty miles long by eight in width, embracing about 150 square miles, and surrounded by running water as may be seen by the maps of California. Settlers have commenced upon the track, more by accident than design, being mostly emigrants from the Southern and Western States.

This land has been surveyed, but is not yet in market. The settlers can preempt or hold it under the "Homestead act,"—160 acres.

The alluvial soil or sediment is very deep. I saw good corn grown there, planted the 8th of July, fully ripe. One man tells me he planted a crop of corn the middle of June, on new land, that matured; some ears stood fourteen feet above the ground. One yoke of cattle will break it up, and when under cultivation one good horse can plow with ease. Eighty bushels of corn can be grown in favorable localities per acre, without hoeing. I saw land recently plowed, well stocked with beans and potatoes, from the seed of last year that remained over. The best crops of wheat and barley grow upon lands only dragged over with a harrow.

The cultivation of the grape and wine making can be made a profitable business, as well as tobacco. Wheat and barley produce from 40 to 60 bushels to the acre. Peaches are very hardy and grow rapidly. Melons and other crops from the vine are grown by dropping the seed, in abundance. Trees at four years growth in the forest, may be found four inches in diameter and twenty feet high. I have seen willows that height at two years' growth. Fence can be made from the willow or the Osage Orange.

The settlers of this country have to go 160 miles to mill. There is water power on this tract or island. A small mill that would grind and sift the grain, at a cost of $300, would take tolls enough to support a large family in breadstuffs.

The freezing of water is unknown. One year with another, the average of falling water will not exceed eight inches. Enduring wood and water on this tract are indispensable, that many parts of California is deprived of. Water for irrigation is conducted upon the land at a trifling expense, though some crops and fruit trees in favorable localities do well without flooding.

The "El Tejon" grant is on one side of this. They have 400 acres of grain in one field that looks well; it was put in by the Indians.

On the 28th of February violet flowers were in full bloom, and butterflies in glad hosts paying their new birth-night obeisance to the morning's soft sunlight. The lazy man in this country need not starve where his wants are few. I have slept comfortably with raised windows much of the time since the first of March. A young man from Massachusetts stopped with us last night; he said it was the first in six months that he had slept in a house; his residence was forty miles north of here. Herdsmen mostly sleep in the open air, the ever bright skylight next above their covering.

Our post office address is Los Angeles, at San Fernando Mission. Twenty-five miles this side there is a large vineyard, planted by the Catholics seventy-five years ago, at present very profitable and productive. It is said these vines have never had any kind of manure applied, and only very slightly cultivated. Here also is the olive tree, two feet in diameter, from the fruit of which oil is manufactured, worth four dollars per gallon. The olives are sold in San Francisco at two dollars per gallon.

I will give you the process of wine making by-and-bye, according to the modern improvements at Los Angeles.

Kern River, April, 1863. SOLO. W. JEWETT.

THE WHITE GRUB IN THE CORNFIELD.

This insect has made fearful ravages in cornfields in this section of country, within the last few years. Its ravages are confined more to sward lands than any other, especially when plowed in spring and manured with green manure. A liberal dose of ashes put around each hill just before a shower, will be productive of a beneficial result. Salt sown broadcast over a field is also a good destroyer of worms. An effectual remedy is to dig them out; as soon as you notice your corn being cut down, call all hands into the field—boys and all, the more help the quicker done—let each take a row; follow on carefully noticing every hill; when a stalk is found cut, dig lightly around the roots of the same until you find the gentleman—take him out, bruise his head, and proceed through the field. This process continued twice each day, for ten successive days, will save your corn. This may seem a tedious job to think of—not so to execute. I saved a field of four acres last spring, which probably would have been entirely destroyed if left alone. The labor expended was but a trifle.

A better remedy still is to call on the crows. Some of your readers may laugh at this, but let them try it once. Keep all scare-crows out of the field. Sow broad-cast over your corn patch every night, a few quarts of corn; the crows will be at work early in the morning getting their breakfast, at which time the grubs are on the surface, and are picked up by hundreds. A few years ago my father had a field of corn in which he placed some scare-crows. The grubs commenced cutting down the corn; a friend advised him to pull down the scare crows and sow some corn over the field, which he did, and had the satisfaction of seeing his corn saved. The crows came on by scores. They will not meddle with the growing corn if they can find plenty besides. Try it, farmers, and report. F. E. W. *North Halley, C. E.*

TWO DAYS IN NEW-JERSEY---I.

The tributary streams of the Delaware—the Crosswicks, Assiscunk and North and South branches of the Rancocus creeks—which carry to that river the westward outflow of the county of Burlington, in New-Jersey, drain a region of quite diversified agricultural character,—in parts long settled and long under cultivation, and in some other parts still awaiting the hand of improvement. The surface is but slightly rolling—its general aspect being that of a succession of gentle slopes and almost level lowlands, with here and there an occasional ridge or bluff overlooking many miles of farming land around. The soil is widely variant on the Upland, abruptly changing from a light loam or sand, to quite a stiff and clayey consistency, on the same farm or in a single field. Along the head waters of the streams—particularly of the Assiscunk creek, which we had the fullest opportunity of examining in our recent visit—there are low and originally swampy Meadow lands, of a peaty character, underlaid in numerous instances with bog iron ore, and yielding, when drained and renovated, pasturage and hay of the richest quality and apparently for an almost unlimited series of years.

Not very far to the eastward of the region to which these remarks are mainly applicable, there are large extents of pine lands and cedar swamps, some of which may in time be brought under cultivation. Clearings are indeed increasing now among the pines, where the soil is not so hopelessly poor as to forbid the undertaking. In the Western part of the county, the proportion of woodland on the farms is decreasing as improvement advances, but we found rather more standing timber yet remaining than we had been led to anticipate—giving a beautifully variegated character to the landscape when seen from any elevation, while there are, here and there, detached trees, along the roads and in the fields, especially oaks and elms, which can scarcely be surpassed as single specimens for age and size.

With so many circumstances variously affecting different localities, even in the same immediate neighborhood, we can scarcely draw any picture of the Agriculture of Burlington county, as a whole, which would be applicable throughout. Our drives under the kind and experienced guidance of Messrs. WATSON and WALTER NEWBOLD, extended over a circuit of perhaps twenty-five or thirty miles each day, giving us glimpses more or less complete, of many of the best farms in Mansfield, Springfield, Chesterfield, New Hanover, Burlington and North and South Hampton townships. In these a mixed husbandry is carried on,—combining the grazing and feeding of cattle and sheep, or the making of butter, with the production of the cereals, and to some extent of hay and potatoes as market crops, in such proportions as the individual character of the farms may render expedient.

The *best farms* are considered those which include a considerable area of the natural meadow land referred to at the close of our first paragraph. In the character of the upland there are also differences, as we have seen, which lead to a classification between farms naturally "good" and "poor." But, in point of fact, many which originally belonged in the latter division, by judicious management and the careful husbanding of their resources, are now among the most productive and profitable. And there are some other farms, on which there is meadow enough and as good upland soil as any, but where the lack of improvement or the overcropping of past years, has either left them at a stand-still or led to their partial exhaustion, while all around has yearly shown more or less change for the better. We may add yet another division, arising from the length of time since this part of the State was settled—farms which were probably selected at first as among the most eligible of all,—which were worn down in the progress of time,—but which during the past thirty or forty years have been renovated and brought up—in some more recent cases by the liberal expenditure of capital; in others, simply by the slower but not less certain means within the reach of moderate resources when superintended by a skillful and patient spirit of enterprise.

Farms of all these kinds were pointed out to us as we drove along the generally excellent roads of the county, and at some of them we had time to call and inquire more particularly into the purposes to which they were devoted and the measures of improvement of which they had been the subjects. These Improvements have been mainly in three directions:

I. Underdraining.

We have never been to our knowledge, in any section of the country, where *underdraining* prevails to so great an extent within a similar area as in this part of Burlington county.

It was begun at a very early day, being then confined mainly to the laying down of one or two leading drains in a field, to cut off the most troublesome springs, or perhaps occasionally to intercept the surface water from higher elevations. In the outset, wooden drains were in vogue, at first constructed of two poles in the sides of the drain, covered by a slab, or of three pine slabs—the lower two having their convex sides laid together at the bottom, with the third covering the aperture remaining open at the top. A drain of this latter kind we could still see in operation in a field at Locust Grove, the farm of JOHN BLACK, Esq., by whom it was put down in or about the year 1814. Mr. B. was among the very first who introduced underdraining, together with the father of Mr. WATSON NEWBOLD, and Mr. CLEAYTON NEWBOLD, the latter of whom still survives, residing with his son Mr. WALTER NEWBOLD at Cloverdale, of which farm we shall have more to say hereafter. At Crescent Farm, the residence of Watson Newbold, the earlier drains have been almost wholly superseded by others of later construction.

The second style of draining introduced was done by the use of two hemlock boards placed together at right angles, thus, ∧—one board five inches wide and the other six, with three slats connecting the bottom edges of the boards to keep them from spreading—one in the middle and one at each end. A strip of board was placed over the joints. This made a useful drain, and some of them, where the soil is such as to preserve the channel free, are yet doing service.

Although Draining was thus early known and practiced here by a few leading proprietors, the practice extended slowly and could not be said to have become general until within the past 15 years, since which time tile have been in constantly increasing demand for the purpose. The first tile machine was obtained from Albany, and there are now four tile making establishments within a short distance of Crescent Farm, which furnish them at about the same prices as are charged at the works in Albany. There are few farms of any pretensions to im-

provement, on which they have not been employed to some extent.

And there is probably no section of country in which their beneficial effects are more plainly apparent. Of the meadows we saw more than once, two fields side by side, one boggy and overgrown with coarse and almost useless grasses, in which cattle would sink at every step at the risk of being mired, and the other firm under foot, with a fine, thick sod, and as luxuriant a growth of green grass (*Poa pratensis*) and white clover, as we ever saw on the meadows of the Brandywine or in the best pasturage of Kentucky. The first cause of the contrast thus exhibited was the underdraining of the land, but combined as will be noted hereafter, with good treatment in other respects. In the grain fields, on the upland, moreover, we now and then passed one which would show a hollow or two almost bare of grain, or a long strip through which the results of superabundant moisture were equally apparent; and others, near by, presenting as even and complete a surface of waving straw as could be desired, and owing this pre-eminence almost wholly to the "underground crockery" they had received.

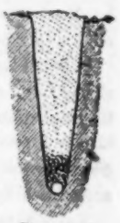
Where the surface is often so nearly a level, great care is essential in laying the drains to secure a proper and regular descent. Mr. Watson Newbold has found it expedient to put the lines of tile just below the water veins which seem to percolate the ground, at different depths in different cases; and in locating them, and judging as to their depth, a field in which the work was going forward afforded us an example of the care taken and the means employed to reach the best decision. Holes like post-holes were dug at intervals, and the distance below the surface at which the water began to come in was noted, as well as the rapidity with which it entered, and the depth to which it accumulated after standing. There is a hard and sometimes quite impermeable crust not far below these water veins, and by putting the drains so that the most of the water they receive will be likely to have a fall to enter the top of the tile, of two or three inches, they are less likely to be choked up or washed out of place, than if so laid that the water comes up from beneath and around them. The depth is varied accordingly, from three feet or even two feet and a half, to three or four feet, or deeper when requisite for short distances in certain cases. The general depth is about three feet, probably, but varies according to the above considerations, and Mr. N. was strongly impressed with the idea that *no uniform rule* could be promulgated, as some have attempted to do, as to the depth of farm drainage in all cases and in every variety of soil and subsoil.

Since we have ventured into this meadow where draining is now going on, a few remarks farther, as to the mode of opening the drains, may be suggestive to others in like situations. Mr. N. first opens two furrows with the plow, at such distance apart as suits the depth to which the drain is to be dug—say, for a drain three feet deep, so as to leave a strip of sod 6 inches wide between the furrows, which are thrown *outward*. The strip of sod is chopped transversely with the spade and thrown out with fork or shovel, and then two more furrows are plowed—this time turned *inward*, leaving a clean land-side on each side the ditch, the remainder of which is excavated with the usual tools. Before covering the tile, which are laid from the upper end of the ditch downward, the man walking on the tile,—litter in considerable quantity is placed above them, especially if the soil is loose, and the final covering is done if it proves more convenient, to some extent at least with the plow.

The tile used here are the sole tile, very nearly round, except for a slight shoulder which gives them a flat bottom. We presume the pipe-tile which have now been almost universally adopted in England, in preference to any other pattern, will eventually supplant the style thus far prevalent, but they have not yet been introduced.

Round or Pipe-Tile.

As the subject of their relative merits came up for discussion, we adjoin here diagrams showing the pipe-tile and the manner in which it lies in the ditch, exactly fitting the concavity of the bottom—thus saving extra labor in excavating; and since, as Judge French says, "there is no *wrong-side up* to them," they may be fitted at the ends much more neatly, and are much less likely to be misplaced in filling the ditch. In places such as there are in some of these New-Jersey fields, where a loose sand intervenes for a short distance, *collars* would be necessary to keep the tile in place, and would do so more efficiently than a simple bit of board accomplishes this for sole tile when placed under the ends of the adjoining tiles. *Collars*, as our readers are aware, are simply shorter pieces of round tile, of a calibre just large enough to admit and hold in place, the ends of those which constitute the line of the drain.



Drain as Laid with Pipe-Tile.

Pressure upon our space in this number obliges us to defer the continuation of the subject until another week

L. H. T.

BLACK LEG, &c., IN CALVES.

Messrs. Editors:—In the Country Gentleman of June 4th, Absalom Hoover makes an inquiry in regard to a fatal disease among his calves. I should think from his description that it is what we call black leg, black thigh, &c., according to the situation of the black spots or tumors. In fact it has as many names as there are locations for the disease.

Youatt thinks that this affection is a pure inflammatory fever. Dr. Dadd contends that "it is an epizootic affection, and like most epizootics its pathology is obscure." He says "the causes of this affection are as obscure as the cholera, influenza, potato rot, &c. They seem to be independent of local causes, occur at uncertain intervals, prevail for an indefinite period, and run their course in a short space of time."

I have known quite a number of cases, mostly among calves from two to four months old. The subjects were calves that had had plenty of milk until time to wean, and then turned out to grass. Of course this sudden change of diet must injure the animal, and he becomes diseased. His digestive organs refuse to perform their functions, the secretions are stopped and disease makes its appearance in the shape of black leg, diarrhœa, hornail, bone disease, &c.

"An ounce of prevention is better than a ponnd of cure." To prevent diseases among cattle requires a considerable amount of care and attention. They should be well provided with suitable food and in suitable quantities. Over feeding is quite as likely to produce disease as under feeding. Keep them in a good thriving condition. Avoid forcing and stunting alike. When they are stabled see that they have plenty of pure air. Pure air, pure food and cleanliness are the essential points in sustaining the health of our animals.

Black leg generally proves fatal in this section. There are a thousand and one remedies, but they are more apt to kill than cure. The disease runs its course in so short a space of time, medicine is of no avail.

Warner, June 8th, 1863. S. C. PATTEE.

MAPLE SUGAR.

Eds. Co. Gent.—I have been a reader of the Country Gentleman, for years, and of its correspondence none is more interesting to me than that of practical farmers giving their experience and practice in that great and all important business, the cultivation of the soil. I consider an ounce of experience worth a pound of theory, and as agriculture has not yet been reduced to an exact science, and perhaps never will be, the farmer's guide must consist in the practical experience and close observation of the past.

When I ask the advice of my neighbor farmers about any of my farm operations, I place a value upon their suggestions in proportion to their experience and close practical observation. Theory, if plausible may perhaps justify a limited expenditure as a test, but large investments relying upon theory alone, are dangerous.

Pardon me—I intended to write about making maple sugar and molasses.

Having noticed several communications lately in the Co. Gent. on this subject, it occurred to me that my mite of experience might be acceptable to some one seeking information in that direction. I make no pretention to anything new, but give my practice for what it is worth.

I commence operations at any time after the middle of winter, when in my opinion the season appears propitious, which in this locality may take place between the 20th of Jan. and the 1st of April, but which more generally occurs from the 10th of February to the 10th or middle of March. I bore my trees with an auger 2 to 3 inches in depth, inserting a *spile* or spout made of the paw paw, (which I prefer to any other wood for that purpose,) and catch the water in wooden buckets holding 3 gallons, which until this season have cost me about 12½ cents each. When I haul in the sap I use a pair of horses to a sled, with two 40 gallon barrels. Taking a couple of empty buckets, I take a bucket of sap from the tree, leaving an empty one in its place.

The cheapest kind of reservoir I have yet used is a box or trough made of 1¼ inch oak plank, seasoned, 2 feet wide, and 12 feet long I nail the bottom plank and the ends on to the two side pieces with 20d spikes, using the plank in the rough, as it comes from the mill.

After collecting the sap I reduce it by boiling as rapidly as possible, for the sooner it is boiled after running from the tree, the better will be the sugar or molasses. For boiling I use pans, the bottoms of which are made of No. 20 sheet-iron, and the sides of 2 inch poplar plank, the ends being a continuation of the sheet-iron bottom turned up and nailed to the ends of the side pieces. I use a furnace with grate bars and a door in front, and so constructed that the fire is in close contact with the bottom of the pans. I set one pan of about 6 feet in length on the furnace in front, and another 4 feet long beyond the first, next the chimney. In this smaller pan I finish off my molasses or sugar, and this pan can be removed from the furnace to cool, and be replaced by another of the same size, and the boiling continue without interruption.

My process of reducing the sap is this: I keep the larger pan supplied with fresh sap by means of a spout, with a coarse cloth strainer over the end, from the reservoir, so adjusted as to admit a supply equal to the evaporation from the pans From time to time I transfer sap from the larger to the smaller boiler, passing it through a fine woollen strainer. After accumulating a desired quantity in the small pan, and reducing it to a thin syrup, I clarify it by putting into a quantity which will make 3 or 4 gallons of molasses, the white of an egg beaten up with about a gill of sweet skimmed milk; the syrup should not be hot enough to at first cook the egg This entangles any sediment or foreign matter in the syrup, and when brought to the boiling point causes it to rise, when it is skimmed off, leaving the syrup clear and clean I then continue to boil it as rapidly as possible till it is reduced to the desired consistency. I have not used a saccharometer, but I reduce my molasses to what I suppose to be about 38 deg. My process of making sugar is to reduce the molasses to a degree which I should think to be about 48 or 50 deg. and pour it into a cask with one head out, with a spile at the bottom, and so add other lots from time to time, as they are made. In a short time, sometimes in a few hours the mass will begin to granulate, and after having stood some days or weeks, I pull out the spile at the bottom, when the molasses will drain out, leaving a white, coarse grained, mellow and beautiful sugar.

I consider this process the true mode of making maple sugar. I have entirely abandoned the old method of "stirring off." By that practice anything like a fair quality could only be made in the early part of the season." By draining a better article can be made at the latter end of the season, and I now reverse the order of making sugar and molasses, and make the latter in the first, and the former in the last of the season. There appears to be a certain amount of saccharine matter in the sap which will not crystalize, and when boiled down with the sugar in the old way forms into a wax or candy, and makes the sugar hard and lumpy; when drained, this matter passes out, leaving the pure sugar crystals.

In all my operations in sugar making, from first to last, I regard cleanliness as indispensable to good results. No vessel used should be permitted to contain a particle of dirt or foreign matter, if it is possible to prevent it—all means should be used to keep them perfectly clean and pure.

At the end of the season I put my buckets in my cellar, where they keep in perfect order till again wanted. Before putting them away I scald them and scrub them inside, making them thoroughly clean; they are then ready for immediate use the next season.

Clermont Co., O. W. C. PINKHAM

HOW TO DESTROY WEEDS.

Messrs. Tucker & Son—In perusing volume one, number one, 1844, of your Cultivator, new series, I noticed an article in it which I think too valuable to be lost or forgotten. Doubtless there are many who have not the Cultivator as far back as I have mentioned, and this may be of some service to them. It told how to destroy thistles by use of salt. Having many Bull or Michigan thistles in the corners and along the fence of my farm, I tried the remedy, which effected an immediate cure. Seeing it destroyed thistles so well, I tried it on yellow dock, mullen, wild carrot, ox-eye daisy, &c., &c., which had the same effect as on thistles. Early in the spring, as soon as the weeds had made their appearance nicely, I took a dish of salt and went round the farm and gave all a dose. I put about a spoonful or more on each plant, and put it as nearly as possible in the centre of each plant.

The next day I went around to see what the result was, and found them all the same as though hot water had been turned on them. Let salt remain as dear as at the present time, I think it an easy, cheap, and sure way to destroy any kind of weeds. You need not be afraid the salt will not do the work, for I never knew it to fail on one plant. E. C. K. *Cape Vincent, May 13th.*

KEEPING VERBENAS OVER WINTER.

My "better half" has no difficulty in keeping the Verbena in the house through the winter; with her the question has been how to keep Verbenas in the open border. After many experiments she has succeeded the past winter, by placing over the plant a frame made for protecting cucumber hills, having in it a 10 by 12 glass. The Verbena remained in fine condition, fresh and green, all winter, was uncovered early in April, then growing vigorously, and on the 10th of May was in full bloom. Those kept in the house are potted in the fall early enough to root well before freezing weather comes on; they are then placed in the east windows of our sitting room, where we have wood fires, and never allow the frost to enter. The plants are kept clean and moist; tobacco smoke (which I can supply whenever called upon,) applied when necessary, and thus the plants are kept healthy and vigorous through the entire winter. This spring they commenced blooming the last of March, were in full bloom by the middle of April, and now are in the garden as bright and beautiful as one can desire.

If one will but pay attention to the plants, it is easy to see whether they are suffering from dust, want of moisture or insects, when the proper remedy can be applied and the plants kept in a healthy state.

Southern Ohio, May 13. BUCKEYE.

KEEPING FARM ACCOUNTS.

Although there has been not a little written in Agricultural papers about keeping farm accounts, still I have never appreciated the importance of it so fully as I have of late.

I am right glad that the Legislature of our State has passed an act requiring the collection of agricultural and horticultural statistics. It will be of untold benefit to our country pecuniarily; and I am able to conceive no other enterprize, that, if it is continued as it should be, will tend to *elevate* the character of our farmers as much as the effectual carrying out of the design of the legislature in this respect.

The design is a noble and grand one. We who profess to approve of it do not half appreciate its importance and the good effects that will most certainly attend it. Notwithstanding our first effort will be, like all other experiments very imperfect, and the tangible results, by way of statistics, very incomplete, still the way will be prepared for results that could never have been attained by any private enterprize.

But very few farmers keep accounts of the productions of their farms, and if they are interrogated with reference to the debt and credit, and productiveness of their fields, they are not able to give any more correct answers than they could give were they asked what relation their children may be to the prince of Denmark.

Occasionally we meet with a farmer who keeps a correct account of everything, and he will answer any question that you may ask him about his farming operations by referring to his books or diary.

In my rambling through the county I have met with several farmers who not only keep statistics of their farming operations, but who keep a diary by which they can tell exactly what themselves and workmen were engaged in during every day of the year.

When I was on the farm of Mr. THOMAS GOULD of Aurora, in this county, he showed me his diary, by which he could tell just what every man was engaged in, not only during whole days, but parts of days. And Mr. Gould assured me that this practice had saved him, during one year, over $60—a very handsome remuneration for a few leisure moments each day, and for a little paper and ink.

A few days ago I was at the residence of Messrs. THORNTON, extensive farmers, situated on the outskirts of this city, who gave me statistics *from their books* of their large farm, and even the number of fruit trees was entered on their books.

Such things speak well for the *intelligence* of farmers, and if farmers would accustom themselves to keep minute accounts of everything that they have anything to do with, how much more intelligent they would appear, and how the practice would tend to elevate their vocation.

Farmers, let your sons have paper and ink to keep accounts, and aid them in doing it. One of my little sons has a book and pencil, in which he keeps a penny account of everything that is consumed in our family. A man or boy will perform just as much work, and sleep just as many hours when he keeps his accounts well as when he does not. S. EDWARDS TODD.

USE OF PLASTER.

I notice in the Co. GENT. of April 16, an article on the use of plaster, by G. P. SERVISS. As he desires to hear the opinion of others on the subject, and as some of my views conflict with his, I have taken the liberty of replying through the columns of your journal.

In the first place he says, "I believe it is pretty generally admitted that plaster is not in and of itself a fertilizer." Now on this point I most materially differ, as I contend that plaster is a very excellent fertilizer. Plaster, as we all know, is composed of sulphuric acid and lime, which are both very excellent manures. It is also known that plaster will resolve into these components. Now, since sulphuric acid and lime enter so largely into the composition of plants, is it not reasonable to suppose that these two elements are of use in a chemical point of view, by entering into the combinations of plants. If plaster were of use in a mechanical view only, as Mr. Serviss contends, would not all soils be equally benefitted by it? But we find some on which it produces no effect at all, and again others which have been greatly profited by it. Now, according to my idea, the reason why it does not affect all soils alike, is that some soils already contain a sufficient supply of sulphuric acid and lime for the present use of vegetation, and that therefore the application of these substances is useless, whereas these elements are deficient on those soils which are benefitted by the application of plaster. I do not mean to say that plaster has no mechanical effect, as I believe it to be useful as an absorbent of gases; but I also believe that in a short time plaster will be washed into the earth out of the reach of the atmosphere, and then will not its mechanical effect be greatly contracted? Johnston, in his Agricultural Chemistry, says that in the neighborhood of Lyons it has been found that very dilute sulphuric acid exhibits the same beneficial effect upon clover, that has elsewhere attended the use of gypsum; now would not this go to prove that the plaster was resolved into its components, and that the sulphuric acid, to say nothing of the lime, entered into the composition of the clover? Mr. S. is also of the opinion that the face of the earth yields only a certain limited quantity of produce annually, and that although the application of plaster to a certain part will increase the amount of vegetable matter on that part, it is done at the expense of the adjacent portion. We will allow for argument's sake, that there is but a limited amount of gases liberated into the atmosphere for the use of plants, and if, by the application of plaster to a certain part of the surface of the earth, the vegetation on that part consumes more than its proper share of the gases, it must follow that the whole or a portion of the remaining surface will be deficient to a corresponding extent. Now Mr. S. himself, says—"the gases arising from our barn-yards and decaying substances of many kinds, are carried by the wind over the face of the earth in every direction;" then, this being the case, why does he think that the part adjacent to the plastered part should especially suffer, since the remaining part of the gases is universally distributed? It is also stated that by the use of gypsum in Germany, the produce of clover and the consequent amount of live stock, have been increased *at least one-third.* Now although the application of plaster has proved of such an immense value to the Germans, yet we do not hear of a corresponding falling off in the adjacent countries; and finally, in regard to the experiment of the plastered and unplastered strip, does Mr. S. know that the amount of grass obtained from the unplastered strip is less than the yield would have been on the same ground if the whole field had been left unplastered? J. S.

Chester Co., Pa.

PRECOCIOUS MILKER.—In the spring of 1860 I purchased from a drove of "Marylanders" a two-year old heifer, which I thought had some fine points. She had a calf the latter part of the summer of 1861. Some two months before her calving, I noticed that her udder was much swollen and very painful to the touch. She was brought up and milked, yielding 11 pints. The flow increased so much that in a few days it was necessary to milk her twice a day, when the yield increased to 13 quarts per day, which she continued to give till the day she calved—full six weeks. The milk was entirely good to within a few days of her calving. The calf was a very fine one for a heifer's. She continued to do well, giving about 14 quarts per day until I sold her. Having parted with my farm and removed from the neighborhood, I have not heard from her since. S. A. *Del. Water Gap, Pa*

How Cheese is Made at the Cheese Factories.

A correspondent of the Ohio Farmer, Mr. ANSON BARTLETT of Geauga county, furnishes that paper with the following interesting account of the manner in which cheese is made at the factories in this state:

Cheese making, like every other branch of manufacture, requires skill; and I claim that no persons can succeed in making a superior article of cheese, unless they devote their whole time and attention to the business—it being one of the nicest chemical, as well as a very nice mechanical process, it follows, as a matter of course, that any mistake, or any thing wrong, however small it may be, in itself, is sufficient to injure the product, and lessen its value.

The almost universal practice of dairymen is, to allow as little time as possible for making their cheese, hurrying through with it so as to be about something else; and the only question they stop to ask is: "Will it sell?" With this answered in the affirmative, they are content, caring little whether it is good, bad or indifferent. When I think how many there are in Northeastern Ohio, who will persist, year after year, in taking good wholesome milk, (for mind you, the cows don't give sour or stinking milk,) and work it up, or allowing it to work itself up, into such hard, dry, sour and stinking stuff, as they do, I feel vexed. And then to have them pretend that such garbage is fit for human beings, when a great deal of it is already half decomposed and rotten, or is so dry and hard as to be almost indigestible, is absurd.

Although I have long held the foregoing opinion of the importance of skill, care, and the necessity of taking time in the manufacture of cheese, I was never so forcibly impressed with them, as during a visit which I made among the fine dairies of New York, located in Oneida and Herkimer counties.

The first of these dairies which I visited was that belonging to Mr. John O. Frazee, two miles north of the village of Rome, Oneida county, where the milk from 400 cows was made into cheese; and where I saw that every cheese in his cheese-house was as *perfect* in *form* as when taken from the press, and still soft as butter, and every one who is posted must see at once that such cheese must be *firm*, *mild* and *rich*—the three essential points of a superior cheese.

I next visited the dairy of Mr. Jesse Williams, four miles from Rome, where the milk from four hundred and fifty cows was manufactured into cheese. Here the same perfection of form appeared as at Mr. Frazee's; and after a critical examination of six or seven hundred cheeses, weighing one hundred and fifty pounds each, I failed to detect any, *even the least*, change of form in any one of them, from what they possessed when taken from the press, and still they were *perfectly soft and buttery*.

I have at one time and another, visited over one hundred of the best dairies in Northeastern Ohio, as well as a large number in Eastern and Western New York and Western Vermont, but I never at any time, or in any place before, have seen a dairy of cheese so near what I considered perfect, as those of Mr. Williams and Frazee; but when I show how perfectly every step of the process of manufacture is reduced to a system, all wonder at the uniformity of the product will cease.

The cows are owned by different individuals, living at various distances from the dairy house; some of them are even four or five miles away; the owners draw the milk as soon as it is taken from the cows, directly to the dairy, where it is accurately measured, and an exact account kept, and the dairymen take it when it is thus delivered to them, manufacture it into cheese, keep it, and take care of it until sold. They then sell it, and after deducting the cost of salt, capping, rennet and anatto used in the manufacture, pay over to each farmer who furnishes milk, his pro rata share of the proceeds, except one cent per pound on the sale weight of the cheese, which, and the whey is the pay of the dairyman for all his labor, care, use of buildings, fixtures, &c.

EVENING WORK.—As soon as the milk is delivered and put into the vats at night, they add one gallon of cold water for every ten of milk, which they will have in the vat when it is all in, and immediately set cold spring water to running around the milk vat, and reduce the temperature as quickly as possible to sixty degrees, when it is left for the night with the water still running around the vat, in order to still further reduce the temperature, and keep it cool through the night, and prevent souring.

MORNING WORK.—In the morning the milk is put in with the last night's milk, as soon as delivered, and when all is in, the heat is raised to eighty-two degrees in warm weather, and eighty-four in cool, and sufficient rennet added to produce perfect coagulation in one hour and fifteen minutes.

THE CREAM.—Before heating to put in the rennet, the cream which has risen on the last night's milk is dipped off and poured back through a cloth strainer, until it has become thoroughly incorporated with the mass of the milk; and after the rennet is added, the milk is kept frequently stirred, dipping off the top and pouring through the strainer until the milk begins to thicken. This is to keep the cream from rising. When allowed to remain quiet, even for a few moments, the cream separates, and rises to the top; and if the curd begins to form with the cream floating on the top, it will work off in the whey; but if kept thoroughly mixed and incorporated with the milk until the milk thickens and the curd begins to form, it is not very difficult to keep it in the cheese, and not lose it in the whey. One great object in adding the water to the milk is to reduce the milk so as to have the cream work in the more readily.

THE CURD.—When the curd is sufficiently formed to go to work at—which may be known by its breaking with a clean, smooth fracture, in passing the fingers through it—break it up carefully with some instrument, so as to leave it in lumps about 2 inches square; but this instrument should have no sharp edges so as to cut, for—take very particular notice—*no cutting edge* of any kind must be allowed in the curd at any time during the process of manufacture. This is essential and important. The curd must be divided entirely by *breaking*, and not by cutting. As good a way as any is to use the hands for breaking the curd from the first. After breaking, as above described, so that the lumps will be about the size of an egg, let it stand about ten minutes, or until the curd begins to settle, and then begin to work and break the curd with the hands. Let the motion be very slow and careful, so as not to work the cream off, or whiten the whey; meantime, raise the heat to eighty-eight degrees; when the temperature arrives at eighty-eight, cut off the heat, let the curd settle, and draw off the whey until there is barely enough left to cover the curd.

PRESSING OUT THE WHEY.—Now comes the most difficult part of the process, that is, to break the curd thoroughly and finely, and at the same time preserve the green appearance of the whey. This is done by taking the curd between the hands in small quantities at a time, and bringing the hands flat and close together with a pretty strong pressure. Care must be taken, however, not to rub or mash the curd so as to start the white whey. In fact I hardly think any written description of this part of the process will be intelligible, practical instruction being almost indispensable, but the result aimed at is to expel the whey from every particle of the curd, by thus pressing it between the hands, as well as to break up the curd.

COOKING THE CURD.—When you have completely broken up the curd, put on the heat; keep it stirred and broken until the temperature arrives at ninety-four, and then cut off the heat; keep the curd stirred with a lively motion fifteen minutes, and then draw off the whey again, leaving just enough to cover and float the curd. Now go over the curd again, and break it up as before, getting fine and even as possible, and then put on the heat again and heat to one hundred degrees. This is the greatest heat. Meantime stir the curd with a brisk, lively motion, cut off the heat and keep stirring twenty minutes, and then cover the vat up with a blanket, and let it stand until the curd is thoroughly cooked, which will be about an hour or little longer. When the curd is completely cook-

ed—which may be known by taking a small lump and pressing it firmly between the thumb and finger—if well cooked, on removing the pressure, the curd will spring out into its former position; or select the softest lump you can readily find, break it open, and if it appears dry inside, and free from whey, it may be considered done.

After Cooking.—Now let off the hot water from the vat, and replace it with cold water; cool the curd and whey to eighty-eight degrees, and then dip the whole out into a draining sink, or a cloth strainer, keep it stirred so that it shall not pack together until thoroughly drained, and then add the salt and work it thoroughly.

Salting and Pressing.—Mr. Williams' rule for salting is two pounds and seven-tenths of a pound of salt to a cheese from one hundred gallons of milk—beer measure—and Mr. Frazee's rule is two and five-eighths pounds of salt to one hundred pounds of pressed cheese. Either rule will do well enough I think, although I prefer Mr. Williams' rule. When the curd is salted, it is ready to be put into the press, and its subsequent treatment is much the same as is ordinarily pursued.

Rennet.—Nothing but the skins of the rennets are used; the curd, if there should be any, being thrown away. The way to preserve them is to use salt enough to do it, and then add a little more salt; stretch on a bow end, hang up in a close, dry place. In preparing the rennet take a gallon of water at the temperature of ninety degrees, for each rennet used, put the skins into the water, and add more salt than will dissolve; let them soak two or three days, rubbing them occasionally; and then take out the skins and put them into another vessel, and add water and salt as before. Use of the first until that is gone, and by that time the other will be ready. A good rennet is sufficient to make from six to eight hundred pounds of cheese.

Anatto.—When the rennet is put into the milk, add a small quantity of anatto, just sufficient to give the cheese a bright straw color, or the color of good butter. The best way to prepare the anatto for coloring the milk, is to boil it in strong lye—white-lye is best. The quantity to be used must be determined by experience, as no very accurate rule can be given.

An Easy and Quick Method to Swarm and Hive Bees.

Take young spruce with a thick top of limbs, the stem about as large as a man's wrist, nine or ten feet high—trim the lower limbs, leaving the thick top about 2 or 2½ half feet. Sharpen the lower end, place it about three rods in front of your bees. Make a hole with a crowbar, about a foot deep, and place in the spruce, and tread lightly around, that it may be easily taken out. For a dozen hives of bees have six or eight spruces set in a line, about twenty feet apart, three rods from the hive as above, and then place some a little farther off.

The bees will cluster partly in the limbs and partly below. As soon as they begin to light, place your table about six feet from the bees, spread the cloth on, and then the hive on one end of the table, bottom board under, and raise the hive by blocks two inches high. When the bees are all settled, raise up the spruce out of the ground very carefully, without jarring, keep it upright and carry it to the table very steadily, so that the bees shall not fall off. Then lay the swarm on the table directly in front of the hive; let it lay about five minutes, then raise the spruce a little, and shake it lightly, and lay it down; in ten minutes more shake off all the bees and lay the spruce a little distance off.

The hive should be shaded; if it is not, the bees sometimes leave the hive. I do it by boards sufficiently long for the purpose. The hive should be perfectly clean, the upper part scratched rough, so that the bees can stick the comb. The hive should be wet with cold water before being placed on the table. After being hived as above, let them stand until near dark; then remove to the place where you wish them to stand.

The advantage of using spruce is great—it is so much quicker and easier to hive them, the bees are not irritated, and there is no need of gloves or veil. Also by having these spruce handy by, they are not so likely to go off to the woods. The bees appear to have a preference for the spruce (fixed in this way.)

Last year I had ten swarms; eight of them settled on the spruce when I had plenty of fruit trees near by. The spruce is preferable to anything else. It has a bunch of limbs, short and close together at the top; and it will keep green longer than almost any other timber, which is very essential, as the bees seek a shady place to light on. It will be well to pour water twice a week in the holes where the spruce stand, to keep them green. This method is more especially necessary for those persons who have no trees near by, or where the trees are large. Many swarms are lost, and it is very difficult to hive them when this is the case.

Clinton Co., N. Y. JOHN T. ADDAMS.

Note.—When a person wishes to do anything inside of a hive of bees at any time of the year, take drained honey, thin it a little with warm water, and pour a teacupful over the comb, or a thick sirup from sugar dissolved. They will be so engaged to get the sweet that they will not be cross.

A CHEAP FENCE.

The "Saw Buck" fence that is described in your Annual Register for 1860, is the cheapest good wooden fence that can be built, where rail timber is getting scarce. As I build it, it will turn sheep and swine also, with but two rails or narrow boards nailed on the posts. I would first plow up something of a ridge, and drag the ground level on which to set the fence; then nail on your boards well up from the ground, place two rails or poles on the top to keep it down, and ridge up the earth at the bottom, when you will have a fence as good, with half the cost, and more durable than a post and board fence; but it don't look as well, that's all the difference. People here have built such fences too high, and used too wide boards, consequently they blew over. Posts 4 feet 3 inches long, will make such a fence as high as is generally really required, with something of an elevation, as I before mentioned, to set it on. Henry Voorhees. *Seneca Co., N. Y.*

We copy the description of the fence above alluded to, from our Annual Register:

Fig. 1.

A fence, sometimes used on western prairies, where winds are violent, is represented by fig. 1. It is very cheap, but not neat in appearance. Short sticks are morticed as represented, to form a support, to which common fence rails or poles are nailed. A rider is added without nailing, as exhibited in fig. 2. It stands firmly upon the ground, and may be moved with great facility.

Fig. 2.

To Prevent Rats from Eating Harness.

Mix a little tar with your oil, and they will not trouble your harness. N. B.

TO DESTROY THE ROSE SLUG.

The rose slug, of late years has become very destructive to the garden rose. A solution of whale oil soap has proved effectual in destroying them. It is best applied with a garden syringe. The young insects are now just beginning to appear, and are chiefly on the under side of the leaves. Whale oil soap is not so easily obtained now as formerly. It was, originally, nothing, more nor less than the refuse matter thrown to the surface of spermaceti, in the process of refining, by the use of potash. A rather strong solution of common soft soap will probably answer the same purpose.

Conversation on Transplanting Trees.

N. Don't you think that trees would succeed better generally if we should put manure in the holes next to the roots? This does well in planting corn.

P. No! It is nearly the worst thing for trees that you could do. I knew a young orchard more than half destroyed in this way. The manure was fresh or unfermented, was too strong for the delicate fibres, left air cavities, and caused the soil to become very dry about the trees.

N. Does manure then always injure or kill trees? I thought a poor soil bad for them—how shall we apply it?

P. Old, well rotted, fine manure, well mixed with earth, may be used without injury; or any manure may be placed on the surface in the fall, and spaded or lightly plowed in the next spring. At some distance from the trees it may be plowed in deeply, or the soil may be made rich for a year or two before the trees are set, either in raising other crops, or the land may be cultivated as a fallow, and manure successively applied. A good way is to prepare strips of land in this way, where each row is to stand, and in subsequent years the intervening spaces may be enriched. I once succeeded finely by digging large holes—about 7 or 8 feet across, (the subsoil being porous or with natural drainage,) and then applied a large barrow load of manure to the outer part of each hole, breaking it up with a rake and mixing it well with the soil of the hole as it was gradually replaced, but leaving still a hole three feet across in the centre. Apple trees were set in these holes and common mellow earth filled in next the roots. They grew moderately the first year; but the second season the extending fibres reached the manure, now well rotted and diffused through the soil, and they grew with great vigor. The land was well cultivated for several seasons, and the seventh year some of them bore nine bushels each.

N. I have often heard it recommended to drop a few potatoes or a handful of oats into the hole when the trees is set—they say it keeps the soil loose about the roots. Last spring I tried it on a few trees, and I think it did no good—in fact these trees grew hardly so well as the others.

P. Of course they would not grow so well, and it is a pernicious practice, and about as sensible as to turn a herd of cattle into your corn-field to mellow up the ground with their feet about the hills. The growing potatoes, or oats, only abstract nourishment and moisture from the soil, and cannot fail to injure the tree. It is an old-fogy notion, long since exploded among intelligent tree-planters.

N. Would you ever stake up a tree to stiffen it, or is it unnecessary?

P. Small trees of such size as I prefer, and with roots taken up as long as they should be, never need staking; but larger trees, with roots mutilated or cut short, will require staking to prevent the wind from bending them about, especially if set in autumn.

N. What way do you prefer for staking them—how should the stake be driven in?

P. There are two or three ways; perhaps the simplest and best is to drive a stake, perpendicularly, near the centre of the hole, before the tree is put in; then set the tree and fill in the earth. The tree may be secured to the stake by a well twisted wisp of straw, crossing it between the two to prevent chafing. A band, made of cattail flag, also answers an excellent purpose; but a cord should not be used as it cuts and injures the bark. When the stake has not been placed before setting the tree, it should be driven into the ground at a little distance from it, so as not to endanger injury to the roots, and the tree then tied to this inclined stake. If the tree is quite large, three of these inclined stakes, meeting at the top, may be necessary. They may be set with more accuracy and firmness by making the holes with a crow-bar. Sometimes, a sufficient protection against wind may be given to autumn-set trees by banking the earth about them a foot high, to be removed again in spring.

N. You say that large trees are to be staked to stiffen them against wind—what harm if the wind does bend them a little?

P. Serious injury is done in this way by the tree's working a hole in the soil about the foot of the stem, causing displacement and drying up of the roots; and, when this is the case, no tree can ever flourish; in fact, you will generally find that such trees will die in a year or two at farthest.

N. I am told that it is very important to have the same side of the tree to the sun. Deacon B—— told me (you know he succeeds very well,) that he always makes a notch on the south side of a tree, before he digs it up, so that he may set it out in the same position. What is your opinion on this subject?

P. It can do no harm, but, commonly, it is of no consequence whatever; and I would not give the toss of a copper to know which side stood to the sun. Better direct your care and attention to something more important.

N. You say that "commonly" it is of no consequence—is it so in any case?

P. Yes—in removing trees of several years' growth it is but to observe this precaution; and when they are still older it is quite important. The bark on the south side of the trunk has become inured to the sun's rays, but not on the north side; and if this unexposed bark after remaining so long in the shade be suddenly turned to the sun it will be frequently burned and killed by the heat—especially of such tender barked trees as the pear and apricot.

N. Do you think it necessary to preserve all the fine, thread-like roots in digging up and setting out a tree? I have heard say they were of no use.

P. All the roots should be preserved, so far as practicable, and these should be placed, in setting out, just as they were before. Spread these little roots out in every direction with the fingers, while an assistant is sprinkling in the mellow earth. But, if these small roots have been dried by exposure to the air, they will be comparatively useless, and the larger ones will send out a new set of these fibres as soon as the trees commence growing,—in fact these new fibres are so quickly replaced by small or young thrifty trees that it is not absolutely essential to preserve them as many suppose.

N. I have heard a great deal said about luck in planting trees, and although I don't believe much in luck, I suppose there is always a great deal of uncertainty about a tree living.

P. There should be no uncertainty, nor will there be if the work is well done. If a single tree can be set out with such care that there would be no risk whatever, then a dozen or a hundred may be, and if a hundred, then ten thousand. I have seen large orchards where not a single tree had perished.

N. What do you consider the leading points that are essential to success, and which, if attended to, would invariably lead to it?

P. You will bear in mind that if all the roots of a tree be taken up with it and set out again just as they were before, there would not only be no risk, but no check in the growth. But this cannot be done, and the more they are mutilated and badly replaced, the more they are checked. As this mutilation and careless setting increases, so there is danger of a portion of the trees dying. Most planters prefer to lose a few trees to taking so much care, so there is a sort of compromise of the matter. They sacrifice a few trees to saving a good deal of labor, and sacrifice ten times the value of that labor in growth. It is better to do everything well, and as you request I will enumerate what I consider the leading points. First and most important, take up as many roots as possible, and preserve them from drying much. Secondly, spread these roots evenly on every side while the hole is filling, leaving no cavities whatever among them. If these two requisites are attended to, no tree will die, but if the roots have been broken, we must do the next best thing, which is to pare or cut off the bruised parts. Set the tree as before described and then prune off a corresponding portion of the top, that there may not be more leaves than the roots can feed.

N. Neighbor Jones told me that his cutting off the top did more harm than good. He had tried it, and they did not grow at all in all the summer.

P. Very likely—and I have no doubt he did the cutting after the trees were in leaf, a course that is sure to do harm, and check the progress of the tree. It must be done before the buds swell. Here is a precaution that many overlook, and charge the failure on their own procrastination.

In addition to what I have mentioned, I would recommend settling the earth about the roots by pouring in water while the hole is partly filled. Another good practice is to dip the roots in mud as soon as the tree is dug, to protect them from air and drying; and they should be planted no deeper than they stood before.

GRAPE INSECT.

Eds. Co. Gent.—Enclosed I send you a few little bugs, and also a few grape buds, upon which you will see the manner in which they prey upon the grapevine. These insects are new comers in my garden, though I presume they may be very common in other parts of the country. They have ruined my prospects for fruit upon a few otherwise very promising vines. As editors are supposed to be able and willing to answer all questions, I should be pleased to have you tell us through the Co. Gent. what they are, and how to prevent their ravages.

Albion, Wisconsin, May 4, 1863. R. R. CHILD.

The insect being enclosed in a quill, came safely and without injury. It is the grapevine Flea-beetle, or *Haltica chalybea* of entomologists. It was described many years ago in Silliman's Journal, by the late David Thomas, as the *Chrysomela vitivora*, or the grape-devouring chrysomela. It is usually a dark, brilliant steel-blue color, and about one-sixth of an inch long. It commits serious damages to the grapevine early in the season, or as the buds are swelling, by eating out the interior or tender part, thus stopping the growth. There are different ways of destroying these beetles. One is to catch them in a small gauze net, swept dexterously along the vine, taking care not to break the young buds. Another mode is to catch them in a deep tin vessel. A third is to throw whale oil soap upon them. The best remedy, of course, is that which kills them at once, but we cannot say which would be most convenient in practice.

A NEW VOLUME ON VEGETABLES.

The Field and Garden Vegetables of America; containing Full Descriptions of nearly Eleven Hundred Species and Varieties, with Directions for Propagation, Culture and Use. By Fearing Burr, Jr. Illustrated. Boston: Crosby & Nichols.

The primary object in this work has been "to give full descriptions of the vegetables common to the gardens of this country"—including "the characteristics which distinguish the numerous varieties; their difference in size, form, color, quality, and season of perfection; their hardiness, productiveness, and comparative value for cultivation." The system of classification adopted is clear and simple; and, after remarks upon the general characteristics of each species, the soil and fertilizers best suited for it, its propagation and culture, harvesting the crop, obtaining seed for future use, and the purpose for which the plant is grown in cookery or for the table—we have the most complete and carefully prepared description of all its chief varieties, domestic or foreign, with the peculiar merits or requirements of each at length.

The programme of the work is thus more comprehensive than any other that has before appeared in this country, or, as far as we are aware, in Great Britain. Mr. Burr, we understand, has devoted a number of years of experiment and investigation to gathering the varied information it presents; he remarks in the preface, that it has frequently been found necessary, "in order to obtain some comparatively unimportant particular with regard to the foliage, flower, fruit or seed, of some obscure or almost unknown plant, to import the seed or root; to plant, to till, to watch, and wait an entire season."

So wide a field of inquiry could not well be embraced in very narrow compass, and Mr. Burr's volume is a handsome octavo of 674 pages, printed in a manner which does no less credit to the publisher, than to the increasing public interest in horticultural literature. The illustrations are numerous, new, and very well drawn and executed. The advertised price is $4.

Directions for a Simple Straw Hive.

Messrs. Editors—I am pleased that your readers have such a number and variety of useful and amusing thoughts presented to them in your paper. Allow me to say how I make a plain bee hive, and thus endeavor to contribute to the value of your numbers. I have kept bees forty years, and find it desirable to use straw hives. They are warmer in winter, yet cooler in summer. When put in cellar for winter, the comb will be much less liable to mold, as the straw absorbs the moisture. In the summer heats they will not melt down, for the air contained in the straw is a non-conductor of heat. They are made square, of the size of Langstroth's. Every appliance of frames, honey boards, and glass boxes with covers, are the same as described in Quinby's book.

For the Mode—The frame that holds the straw is more simple than that of an out-house, as there are about it no mortices or tenons. There are four corner posts and two middle posts for the sides. No middle posts are needed for the ends. Corner posts eleven inches long, four inches wide, one and three-quarters inch thick. The corner posts are so placed that the ends of the plates may join, two on the end of each post. Then the plates are nailed to the ends of the posts. The sills are dealt with in the same manner. The ceiling on the inside of posts is made with laths, three on each side and end. The straw is cut just as long as the posts, and pressed against the inside lath by opposing lath outside; three on each side and end.

I have used these hives two years. I am pleased to find they afford no more worms than others—nor as many; for the bees are more vigorous, and defend themselves more efficiently. They are light and clean, and will not warp. No patent desired. H. Parsons. *Delaware Co., N. Y.*

GRASSES AND MEADOW LANDS.

The excellent Survey of the Agriculture of Seneca Co., by the late Mr. DELAFIELD, published several years since in the Transactions of the N. Y. State Agricultural Society, contains a number of pages devoted to the subject at our head. In the increased attention now turning toward grass lands, and dairy stock as well as sheep, there is no part of the farm of greater interest and importance than its meadows and pastures, and we shall copy at length a considerable portion of the report referred to, which is now within the reach probably of only a very small part of our readers:

In a county where grain is the chief product, a small portion of the soil is reserved for pasture or hay. Heretofore about one-eighth of the county appears to have been used for these purposes, and produced an average yield of one ton and a half to the acre. At this time about one-third of the arable land is in grass for pasture and hay.

In Great Britain and Ireland the proportion of meadow lands is nearly two-thirds of their whole surface. In Germany the proportion is said to be one-fourth. In France it is one-seventh, while in Spain, Italy, and other nations, only one-tenth of the soil is in pasture and meadow.

The practice in this county is similar to the practice of England in the treatment of grass lands, where the improved systems of rotation are maintained. The fields are pastured, then broken up for grain, and in course laid down in grass, which yielding in succession hay, seed and pastures, are again carried through the same system of rotation. Grass lands on low margins of the lakes or on moist levels, are retained for a longer period as pasture ground; the proportion is however, limited, as the banks of the lakes rise abruptly from the waters, presenting a soil not well suited to permanent pastures.

The cultivated grasses are red clover and timothy, (fig. 1;) occasionally the red top is mixed with the above, and (though rarely) orchard grass. Red clover is sown in the spring upon the winter wheat, at the rate of twelve to fourteen lbs. of seed to each acre; as this plant is biennial, enduring for two seasons only, it is customary to sow the seed of timothy grass at the same time with the clover seed, in the proportion of twelve of clover to six pounds of timothy seed. The timothy will then follow the clover, producing the richest and best hay for horses.

Fig. 1—Timothy.—(Phleum pratense.)

In regard to sowing clover seed, many scatter it on the late snows and others on the frosted ground, believing that it is thus easily admitted into the soil, and covered by the heaving and falling of the crust of earth. It may well be doubted whether this system is correct, for it is unnatural, and if the sown seed should vegetate by reason of a few warm days, and then be covered with frost and ice, as is often the case, the young plant must suffer and perish. The application of gypsum or plaster to clover is universal. No prudent farmer omits to dress his clover lots with plaster at the rate of one bushel per acre. This is done at a cost of about twelve cents per acre for plaster, which can be readily had from the quarries at Seneca Falls, or from the plaster beds of Cayuga. The analysis of the ash of the clover plant shows a large amount of lime and sulphuric acid among its elements, and this explains the very striking benefits derived from plaster or gypsum.* It is probable that clover fields would derive a yet greater advantage, if they were *harrowed* before the plaster was applied, and before the clover shoots forth strongly.

Farmers differ in practice as to sowing timothy seed when unmixed with clover. If sown in the spring it is liable to perish during the heat and drouth of summer, and if sown in autumn, it will perish with the frosts and snows. The most natural season to deposit this seed with success, is in the month of August, and if then sown with rye, both crops generally succeed. When sown in the spring with oats or barley, it *may* succeed, but often fails, and the same results from autumnal sowing. The August sowing is the most successful and best practice. As timothy grass does not produce an aftermath, it is usual to sow with it either red top or orchard grass, to give a second cutting, or to thicken the bottom for heavier crops of hay, or closer pasture for cattle.

An analysis of the ash of timothy has recently been made, by which it appears that nearly thirty-one per cent. of the ash is of potash; hence it is evident that the use of ashes, leached or unleached, are necessary and important to promote the healthy growth and maturity of timothy, and it cannot be doubted that a judicious annual distribution of lime, plaster and ashes would increase the hay crops of this county in a large ratio.

The clover plant is here generally ready for the scythe early in July, and a second crop is taken for seed in the autumn. Some, however, feed the second year's early growth of clover from May to the middle of June, and then let it run to flower, cutting it in season for seed. In this way much vegetable matter falls from trampled plants, assisting to enrich the soil.

Timothy grass is not generally matured for cutting until the end of July, a period most important to the farmer for securing his grain. Consequently this grass is from necessity allowed to stand on the field until the seed is perfected and ripe, having taken from the stem and leaf those properties most essential for the nourishment of animals. With a view to securing the timothy crop in its best condition, it needs to be cut and cured ten days or more *before the ripening of the seed.*

Fig. 2.—Red top or Herds grass, or common bents.—(Agrostis vulgaris.)

It would be an improvement to the hay and pasture grounds of this county, if red top grass (fig. 2,) were more

* Plaster is a combination of lime, sulphuric acid and water.

† This grass derived its name from Mr. Timothy Hanson, who first cultivated it as a hay grass most successfully in Maryland.

generally cultivated. Red top is a valuable and acceptable fodder for cattle, and another important characteristic is, that it is a less exhausting crop than timothy, as it contains only four or five per cent. of potash, while timothy contains over thirty per cent.

It is now evident that an increasing desire to improve the stock of Seneca, will demand more attention to the production of nutritive grasses for pasture and hay. The period has arrived when a characteristic distinction must be made between meadows or mowing grounds, and pasture land. While grain crops yield a full remunerating profit, it will be important to ascertain the relative values of the various grasses, in order that the most productive and nutritive may alone occupy the soil, and thus avoid a diminished appropriation of acres to the growth of grain, yet meeting the increased demand for hay and pasture.

With this intent, meadows or mowing lands should be stocked with timothy,† fescue, meadow foxtail and meadow grass. The biennial rye grass will be a valuable addition if introduced into the county. One or two unsuccessful attempts have delayed this object, yet it is very desirable to naturalize this nutritive grass in this region. Successive efforts ought to be encouraged, and there is no

Fig. 3.—Fertile fescue. (Festuca pratensis.) Fig. 4.—Infertile fescue. (Festuca elatior.) Fig. 5.—Slender fescue grass.

good reason to doubt full success. Timothy grass has been already named as cultivated. The fescue grasses, (figs. 3, 4 and 5,) have not received the same attention. This grass is very acceptable and grateful to every kind of stock, and they consume it with a keen relish. Sheep and horses will occasionally show a preference for the meadow foxtail, and for young timothy.

The meadow grasses (or spear grasses) shoot forth early in the spring, offering an agreeable repast to every animal. A field stocked with these grasses exclusively, will afford the best and most nutritive hay.

Pasture fields require a different herbage, and should be treated according to the early or late pasturage best adapted to the wants of the proprietor. The following grasses seem to be most appropriate to *early* pasture grounds, viz., foxtail; (fig. 6,) and the vernal grass, (fig. 7.) The first has been already named as an excellent grass for meadows, and the latter is well known as common in most pastures, giving a rich fragrance to meadow hay. This grass is not much relished by stock, yet as an early green food, is eaten by them with advantage.

The annual meadow grass (figs. 8, 9, and 10,) is the most common of all grasses. It will be found in the fields

Fig. 6.—Meadow Foxtail Grass. (Alopecurus pratensis.) Fig. 7.—Sweet scented vernal. (Anthoxanthum odoratum.)

perpetually flowering, affording a sweet and acceptable herbage for all stock. These grasses when cultivated carefully, yield an early and large amount of pasturage. They ought to be sown in September, and then will not fail to produce good pasturage during the following season. If sown at an earlier date the seed will be liable to perish during the continued hot and usually dry weather at the season of harvest.

Fig. 8.—Spire grass. (Poa pratensis.) Fig. 9.—Rough meadow grass. (Poa trivialis.)

Among the *later* pasture grasses may be named timothy and fiorin, (fig. 11,) which is a common grass in England. It does not, however, succeed well on dry soils, though on the rich soils of this county it will prove valuable.

Farmers are aware that in every pasture field there is naturally a mixture of grasses which produce more or less according to the season. Yet a larger yield and better grass may always be produced by cultivating the above named grass seeds in due proportions. A careful attention to meadow and pasture grounds will ever be largely remunerated by the quantity and quality of spring, summer, autumn and winter food for all kinds of stock. This system of cultivating hay and pasture grounds for permanent use has been partially practiced in this county, with results encouraging and claiming greater efforts and continued application.

Fig. 10.—Tooth-flowered meadow grass.

A difference of opinion prevails among the farmers as to the proper period for applying manures to grass fields. Convenience has induced some to spread their manures immediately after harvest, others in September, and again others in October. The rule should be to avoid the frosts, snow and ice, for an exposure to these influences must carry off much that that is valuable, by washing over the hardened surface without penetrating the soil. The most favorable time for distributing manure on grass fields, is when the rains of approaching autumn may wash the fertilizing matters into the soil among the roots of the grass plants, giving them food for a vigorous and early shoot in the spring.

The absence of care and attention to hay and pasture grounds is observable on too many farms. The proprietors of such farms are probably intent upon the cultivation of grain only, or may not be aware that where stock are fed upon pastures or meadows, a constant and rapid deterioration is in progress.

Fig. 11.—Florin Grass.—(Agrostis stolonifera.)

The phosphates are carried off in the bones and bodies and milk of the animals, the manure dropped upon the field affording but a very small proportion of the amount of essential ingredients taken away, and the fields soon exhibit an exhausted condition.

This wasteful practice finds no alleviation by feeding the cattle with enriching food on the pasture ground, from other sources than the products of the farm, for all animals are fed in the yard or pens when intended for the shambles. The improving condition of the cattle, the introduction of full blooded Durhams and Devons, will at an early day correct the evils above alluded to.

PROSPECT OF WOOL PRICES.

The question is very often asked, what will be the price of wool this year? Cannot the wool-growers hold their wool so as to get from eighty cents to one dollar per pound?

I have some thoughts on the subject which you may publish if you think they are worth the room they occupy in your interesting journal. It should be borne in mind that this country does not produce but little if any more than one-half enough wool to furnish the woolen goods it consumes. Suppose the average price of wool, like our domestic fleece, is say 35 cents per pound in Europe, what will it cost the manufacturer in New-York and Boston? I believe duty on wool is 30 per cent., then the account stands thus:

Cost of wool in Europe,	.35
Duty,	.10½
Gold price,	.45½
Premium on gold,	.22½
Freights, commission, &c., say,	.08
Price with gold at 150,	.76½
Gold at par, deduct premium,	.22½
	.53½

Then why will not our wool average seventy-six cents? That is the question I will try to answer.

Usually the great bulk of the wool is bought from the wool-grower before the 1st of October, by two classes of persons—the manufacturers, who are able to buy their whole year's supply, and the wool-broker or speculator, who holds the wool to sell to manufacturers in such quantities as they wish, a large part of which is not used until after January of each year. Suppose the speculator goes into the market and buys the clip at 75 to 85 cents per pound, and this cursed rebellion is squelched by October next, and gold drops, foreign wool rushes in at about 53 cts., I ask where will their money be? Echo answers, *where?* I have no doubt those gentlemen know enough to take care of themselves; believing this, I am of the opinion the wool-grower will have the privilege of taking the chances this time for the last half of the year's supply, if he insists on extreme figures for his clip. It should also be borne in mind that a large part of the wool raised, especially in the West, is raised by persons who keep only from 20 to 60 sheep, persons who have no conveniences for taking proper care of their fleeces after they are shorn, the most of which is sold before the 1st of August, at whatever price is offered. Wool is not their principal product, but relied on to get money to help in their haying and harvesting. Therefore, I am of the opinion no large stocks will be sought for at much above an average of 50 cents per pound this summer; that the small lots will supply the demand for the present; that if we can be sure gold will be worth 150 cents next winter, we had better hold our wool. I say we, for I too am a farmer, but have only 125 sheep, and I am going to wash them too. Some think one-third discount too much for unwashed wool, yet I have always found I could sell washed wool more readily than unwashed with a discount of one-third, which I cannot account for if the manufacturer makes so much at buying unwashed, as some suppose. I hardly think all the conventions that can be raised can make dirt and dung-balls worth *nearly* as much as wool to the manufacturer.

OUT WEST.

The Most Proper Time to Castrate Animals.*

"'Tis never too hot to geld a bull;
And never too cold to cut a boar."—ANON.

I quote this relic of the antediluvians, for aught I know, in order to expose the impropriety of the sentiment contained in it. I have known instances where farmers were actuated by this idea, and have castrated boars in cold weather. But I have never known a farmer to do it but once, because their castrated animals came as near dying as they could, and live. Castrating in very hot weather is not objectionable, providing the animal is kept quiet until he is nearly well. But the most *proper* time to castrate animals, is in warm, pleasant weather. It is not safe to do it in cold weather. It is always attended with danger if done in autumn, especially in the latter part of autumn. Animals should never be castrated during *stormy* weather, unless they are kept in a dry and comfortable place, because they are almost always sure to take cold, and the wound become inflamed. In May and June, in this country, is about as good a time as any other during the year. And for young animals it is decidedly the best time. Let it be performed on some warm, pleasant morning, when there is a fair prospect of fair weather; and if the nights are a little chilly, have the castrated animals confined in a warm shed during the nights, until they are healed.

I know itinerant would-be veterinarians will tell the tyro, when they come along to do such jobs, that there is is no danger—no risk—even if it storms like vengeance. They will warrant them for one dollar. They "use in castrating, the *actual cautery* or the *potential cautery*, or *sticks* tied across the spermatic cord, which have been saturated in some elixer of life, or something else far superior to anything else that has ever been used before for such purposes, so that it is not possible for an animal to take cold!" So they pocket their dollar and abscond; and what is their warrant worth when a valuable animal becomes so inflamed and sore that his life is despaired of? But thousands of young farmers have lost valuable animals in this way, because *they dare not trust themselves* to perform such a job. Let the tyro be hoodwinked no longer. No animal should be castrated when he is not in perfect health. And when they are recovering from illness, and are very thin in flesh, or very much debilitated, castration should be deferred until they have gained more strength.

No animal should be castrated during the period of actual sexual service; because, during that period, there is a greater flow of blood at that part of the body, and there would be far more danger of inflammation were the operation performed at that time. In two or three weeks after sexual service has ceased, castration may be performed with impunity.

If any danger is apprehended from flies at the time of castration, a little warm tar—common tar, or gas tar—applied with a swab around the wounds, will repel them very effectually.

Castration may be performed in winter if the animals be housed until the wounds are healed. In January, 1860, I was on a visit at Danbury, Conn., where I was introduced to a Mr. Whittlesey, who had a yoke of bulls, and he was going several miles to get a man to come and castrate them. They were expecting to cast them in order to do it. I suggested to him, that if he would yoke them and tie their heads, I would show him how the Yankees perform that operation while the animal is standing. As they kicked like an antelope, we placed a heavy scantling on two benches behind them, about as high as the gambrel joints, and let them kick that a few times, when they stood more quiet.

The weather was cold at the time, but he kept them in a comfortable stable for most of the time, until they were whole, and I was afterwards informed that the animals endured the operation very well. Proper *care* of them—protection from the cold—was the all-important consideration in that instance.

Why Inflammation Ensues.

It is no uncommon occurrence to see one animal, where several have been castrated at the same time, become very stiff and much inflamed, and perhaps will die, even when the operation was performed exactly alike in each one.

There are several good reasons for this. Sometimes the animal is not in a perfectly healthy condition, or as it is more commonly expressed, "the blood is out of order." At such a time any wound will be slow to heal. To illustrate: A person cuts a finger when he is well and healthy, and it will heal in a short time; but let the same finger be cut at another time—when the spirits are low and health not very good, and "blood out of order,"—and inflammation will sometimes be alarming.

The most common cause of inflammation of animals at such times, is exposure to cold and dampness. Let an animal be exposed to a cold and wet storm, or let him lie down for a few hours on the cold ground, and the wounded parts will be affected *first*, and inflammation will ensue. And there is sometimes more danger five or six days *afterwards*, that an animal will take cold in its wounds, than there is on the day the operation has been performed. Care of animals—keeping them in comfortable quarters—at such times until the wounds are healed, is of far more importance than all the nostrums of veterinary quackery, either to *prevent* or to obviate the injurious effects of inflammation. S. EDWARDS TODD. *Auburn, N. Y.*

ABORTION IN COWS.

MESSRS. EDITORS—In your issue of the 21st of May there is an article on the abortion of cows. Some three years since this trouble made its appearance on a farm in this vicinity, on which there was a herd of about fifty cows. Early in the winter one of the cows missed, and as they came in too late in the spring, they about all missed, say some 17 or 20, a part being fall cows. I advised the farmer to separate as much as possible, which was done, but without any good effect.

Since that time I have read all I could find on the sub ject, and made inquiries of various persons.

A cow may miss from various accidents, and after she has missed she is very soon in heat. If the bull is allowed to go to her, he will be very apt to get diseased, and if so, to communicate the disease to the rest of the herd. I have had but little experience, but from what I have had I think I should not allow a cow that had missed from any cause to run till some time had elapsed, till she had time to overcome the injury.

This may not always be correct, but from all I can learn it is a safe one to adopt. * *Salem, May* 28, 1863.

HAWTHORN HEDGES.

EDS. CO. GENT.—I wish to learn all I can in relation to the raising of the wild hawthorn for hedge—how to manage the seed—to separate it from the flesh—how to germinate the seed, mode of culture, and planting out. If you or some of your numerous correspondents would anthe above through your columns, I would be much obliged. JOS. E. SCHNEBLY. *El Paso, May* 11, 1863.

The seeds of the hawthorn are to be rubbed and washed from the pulp, and then treated in the same way that nurserymen manage cherry stones, that is mixed with moist sand, and exposed to freezing and thawing. Will our correspondent, W. M. Beauchamp of Skaneateles, please give us brief directions for the management of the seed, such as his experience may suggest?

TORENIA ASIATICA.

This fine little branchy sub-shrubby plant is now pretty generally known and admired. Its delicate porcelain blue lilac colored flowers, in the greatest abundance render it a peculiarly lovely plant for a warm green-house, a situation it most delights in, although it will do in a somewhat shaded but warm spot in the open air in summer. In a stove it flowers pretty freely all winter, where its choice colors render it a great acquisition. It was raised at the New Botanic Gardens in 1846, from seeds received from Courtallam, and is found extensively distributed in the East Indies.

As soon as the hot-bed is commenced in the spring, cuttings, which strike readily, should be inserted, and potted off as soon as rooted, the joints pinched off for a time, and repotted into larger sized pots as required.

The plants may be trained in a variety of ways to give a contrast; such as a few of the leading shoots tied to sticks equally over the surface of the pot, after which the branches should be allowed their freedom, when they will hang gracefully dangling all over, and nearly cover pot and all.

Various trellises to suit the taste, on which the branches can be readily tied, is another way.

Another, and perhaps the most graceful, is to suspend baskets or flower pots, by means of wire, to the rafters of the green-house, from which the plants will throw out their branches all around, and look exceedingly beautiful.

It will grow in almost any light, rich soil, and requires to be pretty plentifully supplied with water, especially in summer. E. S.

POLL EVIL.

Having had a horse suffering with this disease for near two years, and after trying many remedies without success—his head in such a state that I think it would discharge a pint at a time, I and finally made a perfect cure of it in this way: I got a half gallon of alcohol, and put in it as much corrosive sublimate as it would dissolve. Then take some blue vitrol, and put a piece about the size of a pea in the orifice, twice a day, for two or three days. If the case is a bad one, then wash with the alcohol mixture; a very little will answer, and if you find the hair coming off, on blistering, apply the wash less frequently. If you will attend to it as I direct, you will make a perfect cure.

The whole expense with me was forty-eight cents. I applied the wash twice a day for, say six weeks, and the cure is perfect. This was two years ago, and the horse is still well. N. B. *Burlington Co., N. J.*

REMEDY FOR FOUL IN THE FOOT.

EDITORS OF CO. GENT.:—Having noticed several remedies for the foul in the foot, I will give my experience. Sometime in Nov. last, a two year old steer that I had commenced feeding, began to be lame in one hind foot. A man in my employ said it was the foul, and the sooner it was attended to the better; that it would continue to grow worse until doctored. It being the first case under my observation, I allowed him to "boss the job"—procured what he called spirits of salt—placed the steer in the stanchion, and with a rope around the leg, pulled it well back, wound the rope around a timber in the building, and while I held fast, he with a sharp pointed stick cleaned the sore as well as he could and applied the medicine. For a short time it smoked as if all was on fire, but the steer manifested little or no pain except while cleaning the part with the stick. We allowed him to go in the dirt and mud as before. One thorough application was sufficient. GEO. CHAFEE.

Boone Co., Ill., March 27th, 1863.

BLACK LEG OR QUARTER EVIL.

EDS. CO. GENT.—I observe an inquiry of Mr. Hoover of Kansas, as to sick calves. The disease he describes is the one known as *quarter evil*, *black leg*, *black quarter*, *joint murrain*, *blood striking*. In its commencement it is a general inflammatory fever, taking on as it progresses, specific characters, which give rise to the above names. It rarely attacks animals more than two years old, and is mainly confined to calves of six or eight months and yearlings. A common preventive in England for it, is a seton inserted in the dew-lap in front of the brisket, and this is regarded as an effectual protection, and I think justly. When the disease first shows itself, prompt bleeding and purgation are the remedies prescribed by veterinary surgeons; but in later stages, and as the case progresses, a varied treatment is resorted to.

A detailed description of the disease and all its symptoms, with the proper treatment, occupies seven large and closely printed pages in Youatt's great work on Cattle, and not a word seems needlessly said. Of course a full account of it, and its treatment, in the columns of the Co. GENTLEMAN would occupy too much space.

Every breeder of cattle can afford to pay for intelligence to protect his own interest, and should have a good veterinary treatise on cattle. No author in this department stands so high as Youatt. The book may be had of the editors of the COUNTRY GENTLEMAN, at the publisher's price, $1.25, and 25 cents added for postage if sent by mail.

Long a breeder of cattle, I have learned that every breeder must become his own veterinary surgeon; and with *common sense*, he who will give attention to the subject, and make himself familiar with the diseases occurring in his locality, can with the aid of Youatt's book, treat all those diseases far better than the miserable "*cow doctors*" to whom cattle owners ordinarily resort. A farmer should *read*, and be familiar with all that relates to his calling and interest. Books and papers are everywhere offered him to give the requisite information. The ordinary cow doctors read nothing and know nothing. They slaughter by their horrid treatment, more of the animals put under their charge, than would die of disease if untreated. Let farmers then study the diseases of cattle, and become competent to cure them. A. S.

Genesee Co., N. Y.

The Proper Time to Cut Grass---Hay-Making.

As the grass crop stands first in point of value among the crops of the American farmer, it is important to inquire at what period grass should be cut, and to practice such modes of curing the hay as will insure the greatest amount of nutritive matter.

Although farmers differ in their opinions and practice in regard to the proper time of cutting grass, yet scientific investigations would seem to leave but little doubt upon the subject. The nutritive properties of grasses consist chiefly in albumen, gum, starch and sugar. The question then is, at what period do they possess these in the greatest perfection? A correct knowledge of vegetable growth and development would fix this at the period of maturity of the stem, or just after the time of blossoming, and this is confirmed by chemical analysis. The object of nature is, the maturity of the seed for the production of its kind. When the stem has attained its growth it abounds in the properties essential to the maturity of the seed, and if the seed are allowed to ripen, the stem is deprived of a large proportion of these nutritive properties, leaving little less than woody fibre. Those whose business it is to save medical plants, always cut them about the period of full bloom, as it is known that then they contain the largest quantity, and in the greatest perfection, all their essential peculiar qualities; and in order to retain these qualities in their greatest perfection, *they are cured in the shade.*

In the Northern and Eastern States, where the grasses grow in the greatest perfection, the meadows are frequently composed of mixed grasses, embracing several varieties. In England it is the custom frequently to grow a still greater variety together. Where this is practiced the different varieties do not all blossom together, and of course some will be over-ripe, while others have not reached maturity.

In the South-Western States, where the climate is less adapted to the grasses in general, timothy is the principal grass grown for hay, and this, along the rivers, constitutes a very important article for export. The prevailing custom there is to let the timothy stand until the seeds are nearly ripe before cutting. The farmers there argue that at that period it is more nutritious than when cut earlier; they profess to base their practice upon experience, contending that the stock not only relish the hay better, but that they actually thrive and fatten faster upon it. It is not probable that these opinions are based upon any well conducted experiments, and will ultimately give way to more thoroughly established scientific principles. It is possible, however, that the seeming advantages that these farmers claim for grass when cut so nearly ripe, may result from the seed. It is well known that timothy seed is the heaviest of all the grass seeds proper, and that in regard to its nutritive qualities it is equal to any of the cereals. But admitting this to be true, the straw which has thus been allowed to ripen its seed can hardly be regarded as hay of any more value than so much wheat straw. Yet, we have the opinion of one distinguished individual of England, Mr. Sinclair, in favor of late cutting. He says, "that in point of nutritive matter the ripe crop greatly exceeds the crop at the time of flowering," but he does not give the reasons for this conclusion. We think it may readily be traced to the large quantity of seed produced by this grass. There is one point of view in which it may be considered important that timothy should be allowed to stand until it arrives at a period nearer maturity than is essential for other grasses. The roots of timothy differ from all other cultivated grasses, being less fibrous and more of the bulbous character. It is in these bulbs that the vitality of the plant is contained during winter, and they can not arrive at a perfect state of maturity, which is important for the health and perpetuity of the meadow, if the grass is cut while in blossom; which objection does not apply to the grasses in general.

While it may be advisable, for the reasons above stated, to let timothy stand before cutting, until some time after the period of flowering, it can hardly be doubted that the grasses generally arrive at full perfection for hay about the time of full flowering, that they then possess the greatest percentage of soluble materials, viz.: starch, sugar, gum, &c., while the mere stem or woody fibre principally serves as a medium of conveying these substances to the digestive apparatus of the animal, and for the purpose of distension and healthy digestion. For this reason we would urge the importance of cutting grasses generally at the time prescribed, as their seeds are of little value of themselves as food, while the aftermath will be materially increased by early cutting.

Curing Hay.—In order to secure the nutritious properties of grass in the greatest degree of perfection, it should be exposed to the sun as little as possible, consistent with its perfect preservation. Of course every farmer understands the importance of exposing his grass as little as possible to dampness, whether of rain or dews, but undue exposure to the sun should also be avoided. With a dry atmosphere hay may generally be got in the second day after cutting, and it is often secured in the greatest perfection the same day it is cut. It is the external moisture on hay that renders it most liable to injury.

Clover.—At this late date, it hardly seems necessary to urge the importance of curing clover hay chiefly in the cock, for this has been so often repeated that it would hardly be supposed that any farmer could be found practicing any other method, and yet we often see clover exposed a whole day to the sun in swath. While undue exposure to the sun greatly impairs the quality of hay from the grasses proper, that which is made from clover is not only injured in an equal degree in quality, but suffers material loss in quantity, as its leaves and blossoms are of that tender character, and which constitute the most valuable part of the hay, crumble and fall off. Clover should be exposed to the sun only so long as is necessary to expel all external moisture, when it will generally be sufficiently wilted to put into cock. As a general rule, that which is cut in the morning may be put up the same day. The cocks should be small, and usually in about three or four days the hay will be in a fit state to get in. On the last day the cocks should be turned over that the dampness at the bottom may escape. As the hay is put away its quality will be improved by the application of two or three quarts of salt to each ton of hay. The salt also checks the liability to heat and become mouldy. Owing to the time required to cure clover hay properly, it is more liable to injury from the weather than that made from the grasses, yet when clover hay is well made and put up in good order, no hay is relished better by stock, or is more nutritious.

Owing to the very succulent nature of clover, it is better to defer its cutting until about one half of the heads have passed out of blossom.

Saving Manure and Stanchions for Cows.

EDITORS CO. GENT.:—The subject of saving manure is one of the greatest importance to farmers, and for the last ten years I have tried to profit by the experience of others and still do, not only by hints thrown out, but by actual investigation. I have made it a point to visit every new barn, and all places where I have travelled, where outward appearances indicated that all was right within, and in many cases I have found that which was highly commendable and safe for all to follow, so far as would suit our convenience and means.

In visiting so many barns, I had two objects in view——one to study convenience in a barn I was about to build for myself—the other, to learn the best way to save or make manure. I built my barn in 1861, and for convenience on my ground, it cannot be beaten. I have been on to the mow, pitched off hay, fed and put up 12 head of cattle in just six minutes by the watch. I tie my oxen with a rope, and stanchion the cows. I have seen so many stanchions that were such miserable uncomfortable things, that I was prejudiced against them, but for the sake of saving manure and keeping the cows clean for milking, I had some stanchions put up on scientific principles, for trial, and after using them two years, I would not part with them for any thing else that I have ever seen, and the cattle appear to enjoy them as much as I do. There is a floor for them to stand upon, and a drop or gutter behind them that catches and holds all, both solid and liquid.

I see that some of your correspondents are in doubt about the liquid manure being worth as much as the solid; methinks I can convince them to the contrary, if they will visit my cow stables any morning before they are cleaned out. If there is no absorbent put in the bottom of the gutter, the solid manure will hardly thicken it enough so that it can be got out with a shovel, but by putting as much muck, clover chaff, saw-dust, or any other good absorbent, in the bottom of the drop as the cattle make of solid substance, and mixing the whole up together, just double the quantity can be made which would be made were the liquid not saved. Dry muck is the best absorbent; clover chaff is next. I have a mill and use large quantities of saw dust around my barn-yard and sheds, but do not like to use much in the stable manure that I use for corn, for the acid that is contained in oak and chestnut saw-dust will destroy the corn-making qualities of stable manure. I have tried it to my satisfaction. I do not know that any other kind of wood saw-dust will do it. What I mix with manure I use for top dressing.

It is truly astonishing to see how many ways man will devise to waste the liquid from their cattle. Some will make drops or gutters that are not water tight, and they cannot see the value of liquid manure. Others will make them too far behind the cattle, and have no floor for the cattle to lie on, but fill up with dirt, and what liquid falls short is drank up by the hungry earth, thus losing one great object of the drop, beside keeping the cows besmeared with manure the whole time, and *they* cannot see so much value in liquid manure; beside, they are ready to condemn the whole principle. Others will make the floor as open as possible in order to get rid of so much wet, and no absorbent under the floor but the thirsty earth; and here let me say that I have milked six cows night and morning myself most of the time the past winter, and their bags have been as clean as when lying in pasture in summer.

If your correspondent that uses muck under the stable floors, and who inquires if that is the best way, will let his floor and cattle down to the ground, and use the muck for an absorbent as I have described, he will doubtless realize a much larger pile of better manure than he does now, for the liquid from his cattle doubtless follows in the same channels the winter through, and much of it runs through to the ground and is lost; and if not, the muck manure would be much better mixed with the stable manure and all thrown out together, for perhaps much of it may not be wet at all under the stables; but in either case, if he has a mine of muck it is a mine of wealth. One of my neighbors throws the manure from his horse stable into the drop. This is a good operation in the absence of other absorbents; it makes the horse manure much better. I throw mine under my oxen as they have no drop and the horse stable is nearest them.

Bethlehem, Conn. L. F. SCOTT.

MEASURING HAY.

MESSRS. EDITORS—Is there any definite rule for measuring hay? I think not. I have been told that 600 cubic feet on a scaffold, or 500 feet in a bay, would weigh a ton. Having occasion to buy a small quantity of hay, I was advised by my neighbors to have it measured according to the above rule, as by so doing I would get more hay, and save the expense of weighing. But I concluded I had rather pay for what I had than run the risk of paying for what I did not have. I therefore had it weighed with the following results:

The scaffold contained No. 1 hay, for which I paid $10 a ton at the barn. The dimensions were 30 feet long, 9 feet wide, and 7 feet high, and contained 1,890 cubic feet. The hay weighed 2 7-10 tons, consequently taking 700 cubic feet for a ton.

The hay in the bay was No. 2, for which I paid $8 a ton. The dimensions were 20 feet long, 18 feet wide, and 8 feet deep, and contained 2,880 cubic feet, taking 570 cubic feet for a ton. It was weighed on one of Fairbank's hay scales, and of course correctly. Hay No. 1 grew around the buildings and in the orchard, and was not as heavy as the same bulk on other situations where it had the benefit of the sun.

No. 2 was not cut early enough by three weeks, consequently was not so heavy as it would have been if it had been cut in season, and the season with me is when it is in the blow.

I saw a rule in the Independent Democrat, that 10 cubic yards would weigh a ton. I think there must be some mistake in it—at any rate I would advise buyers to draw their hay some distance to the scales rather than buy by any such rule. S. C. PATTEE. *Warner, N. H.*

THE TIME TO CUT TIMBER.

A correspondent in the Scientific American of March 14th, gives the result of twenty years of observation and actual experience, that timber cut in the months of August, September, and October, or after the sap in the tree is used up in the growth, until freezing weather again comes, will in no instance produce the powder post-worm; that the wood is harder, heavier—as proved by actual experiment—more elastic, durable, and is less liable to crack than if cut in the winter months. He says that February is the worst time to cut most, if not all, kinds of hard-wood timber. Birch, ash, and most all kinds of hard-wood will invariably powder-post, if cut any time after the tree is frozen, or before it is thoroughly leaved out in the spring. Chestnut timber for building will last longer provided the bark be taken off. Hemlock and pine ought to be cut before being hard frozen. He is fully persuaded that nine cords of wood cut in the above-named months, will go further than ten cords cut in the winter months; that the wood will burn clearer, the coals will be more solid, and will retain their heat double the length of time.

To the above I would add, that an old Patent Office Report which I lately examined, recommends the cutting of timber in the fall of the year. I give the above in answer to your correspondent D. G. W. in COUNTRY GENTLEMAN, page 205. J. H. P. *Franklin, N. Y.*

ITALIAN BEES.

MESSRS. EDITORS—Having had more than three years' experience with these bees, I send you some important facts respecting them, which have fallen under my own observation, and which I believe have not yet been given to the public.

1. The queens are not only more prolific (as previous writers have remarked,) than those of the common kind, but are much more disposed to keep their brood *compactly* in the combs. An Italian Colony will often have in two or three combs, as large a surface of brood as the black queens will ordinarily have in four or five. This habit of *squaring* out their work, is more particularly noticeable in the early part of the season, and its importance will be readily appreciated by every skillful bee-keeper.

2. *The Italian bees, when forage is abundant, are far less disposed to rob than the black bees.*

As this fact is not only highly important, but directly contrary to the common opinion, the evidence of it will be given somewhat in detail.

Having purchased, last summer, a number of stocks of black bees in movable comb-hives, I examined them when the fruit trees were in blossom, in order to learn the condition of each colony. After a few hours spent in this work, the bees would follow in great numbers whenever they saw me approach a hive to open it. I was very much surprised to notice that nearly all the robbers were black bees. I cannot be mistaken as to this fact, as both myself and my son spent some hours, for several days, in examining those hives. Some drone-combs having honey in them, were exposed to the bees, so that when emptied they might be used for breeding Italian drones, and these combs were soon covered with black bees, very few Italians alighting upon them, although I had a large number of strong Italian colonies. This year, having only a few black bees, and more than eighty Italian colonies on my own premises, nearly all the bees that attempt to rob hives when they are opened, or to alight upon combs containing honey are of the black kind.

I have pointed out these facts to many who have visited my apiary, and the general opinion is, that when forage is abundant, Italian bees are so eager to gather honey from the blossoms, that they have very little inclination to secure it from other sources. It would be difficult to over-estimate the importance of this peculiarity in an apiary where movable-comb hives are used, and where artificial swarming, and other manipulations which require the hives to be opened, are practiced.

It is true that when forage is scarce, the Italian bees are as much disposed to rob as the black, if not more so; but the assertion that they cannot be kept near stocks of black bees, without robbing them of their stores, is erroneous Mr. Quimby, who has had excellent opportunities for testing this point, has said enough to convince any unprejudiced bee-keeper that they may be safely kept in close proximity to common bees, and my own experience perfectly agrees with his.

3. *The Italian bees will work upon the second crop of red clover.*

Three years ago I had 12 swarms of black bees early in June, to three of which I gave, when hiving them, Italian queens. The hives were tolerably well filled with combs by the black bees, but before the young Italians began to gather stores, the honey harvest was nearly over. In August the state of my health prevented me from making any observations, but a member of my family noticed that while the three colonies with Italian queens were working vigorously, the other nine were doing very little. In September I found that the Italians had their winter's supply, while the best of the others had only a few pounds of honey, the season proving one of the worst that I ever knew. The black colonies were broken up, and the bees added to other stocks, while the Italians wintered in good condition. I am now satisfied that the Italians obtained their August stores from the second crop of the red clover. Last August I noticed the Italians working vigorously on the red clover, and saw very few black bees upon it. Mr. C. W. Taylor of Hulmeville, Bucks Co., Pa., who has been so successful in rearing these bees, wrote me last summer, that his bees were filling boxes and frames with honey gathered from red clover, while the black bees in his vicinity were doing nothing. Other persons have written to me to the same effect.

In regions where buckwheat is not much cultivated, and where fall forage is scarce, this peculiarity of the Italian bees will in some seasons make the difference between a handsome profit and a severe loss in bee-keeping.

While it is true that some foreign writers have asserted that these bees will work upon the red clover, I have not met with any statement that they scarcely notice the *first* crop, but confine their operations almost wholly to the *second* crop, or seed clover, which blossoms when the white clover has passed out of bloom, or yields little, if any honey.

I will state, as a matter of interest to bee-keepers, that the three Italian colonies before mentioned produced me the second season 350 pounds of honey, and one large swarm.

Oxford, Butler Co., O. May 29, 1863. L. L. LANGSTROTH

SOAP.

If "A Subscriber's Wife" will use the following receipt for hard soap, I venture to affirm she will not only be "satisfied with the result," but anxious to commend it to all her sister housekeepers. It is superior to common bar soap for the hands, as well as for all kinds of clothes:

Five pounds unslacked lime slacked in 12 quarts boiling water, 5 lbs. washing soda dissolved in 12 quarts water; mix together; let it stand from 24 to 48 hours—drain off all water free from lime. Take the water drained off, 2 oz. of rosin, 3¼ lbs. of cleansed grease; boil one hour, or until it thickens. Pour into some convenient receptacle, and when cold, cut in bars and dry. A SUBSCRIBER'S DAUGHTER. *Maple Row.*

HOW TO MAKE CIDER VINEGAR.

A correspondent wishes to know the most expeditious way of making vinegar out of cider. Probably as good a course as he can adopt is to keep the cider in a pretty warm temperature—as near summer heat as practicable—and allow the air to have access to it. The usual practice is to leave the bung of the cask out, and place a bottle, neck downward, over the bung-hole. The use of the bottle is to turn the rays of light on the liquor, which promotes decomposition. There are ways by which cider can be changed into vinegar more rapidly, but unless the business is to be followed on a large scale, it may not be an object to adopt the process; the cider is made to flow through troughs in a thin sheet, in order to expose it as much as possible to the air. Shavings of oak wood are sometimes placed in the troughs, to render the action of the air more direct on the liquor. By having several of these troughs, or a long length in the aggregate, cider may be converted into vinegar by once running through.—*Boston Cultivator.*

RABBITS IN NURSERIES.

EDS. CO. GENT.—I wish to inquire of you or any of your nursery correspondents, if they can give me a *complete* remedy to keep rabbits out of a nursery? Can it be done by a tight rail fence, by letting the rails come down tight on each other for three feet high? Is that high enough? I propose to put the posts, heavy ones, in 2½ feet deep, and 10 feet apart, and flatten the ends of the rails for nailing, and nail them on the *outside* of one post and *inside* of the next. How small a hole will a rabbit pass through? I had 3,000 yearling apple grafts literally eaten up *or down* last winter by the animals.

Webster Nurseries, Scioto Co., Ohio. A. L. WOOD.

Having never been troubled with rabbits, we must refer our correspondent to those who have had sufficient experience to answer his questions definitely, and who we hope will furnish the desired information. We have understood that some of our Western nurserymen who have been much annoyed by rabbits, have kept them quiet by scattering corn among their trees, at such times as they are most likely to prove destructive to them.

THE CULTIVATOR.

ALBANY, N. Y., JULY, 1863.

☞ The Commissioner of the Agricultural Department sends us a condensed table representing the condition of the Crops of the United States, derived from answers to the circulars sent out by him in the month of May.

From this table we prepare the following statement, which shows about what was the promise of the crops toward the end of last month. A fuller report of the returns is to be published hereafter, but the present will suffice to illustrate the general tenor of the replies to the Commissioner's inquiries.

Winter Wheat—*Area Sown.*—Reported *about equal* to that of 1862 in the States of New-Hampshire, Massachusetts, Connecticut, Rhode Island, Pennsylvania, Maryland, and Indiana; *one-tenth* greater than 1862 in Vermont, New-York, New-Jersey, and Michigan; *two-tenths* greater in Illinois, Missouri, and Wisconsin; *three-tenths* greater in Minnesota; *one-half* larger in Nebraska Territory, and about *three-quarters* larger in Iowa and Kansas. It is only smaller in Delaware, Ohio, and Kentucky, and a comparison of all the returns makes the general average of the area sown *one-tenth greater for the whole country* than in 1862. The *appearance of the crop* is an average in Connecticut, Iowa, Maryland, Michigan, New-York, Pennsylvania, Rhode Island, and Wisconsin; somewhat above an average in Indiana, Kansas, Kentucky, Minnesota, Missouri and New-Jersey; below an average in Delaware, Illinois, Massachusetts, New-Hampshire, Ohio, Vermont and Nebraska; and the computed prospect of yield for the whole country was not quite one-tenth below the average per acre usually obtained—in other words the increased area sown is about counterbalanced by the fact that the crop is not generally looking quite as well.

Spring Wheat—Both as to area sown and prospect of yield, is much the same as in 1862, take the country together. We are somewhat surprised to find the area sown reported as on the whole larger in the West generally than last year; and in this as well as other respects we seem to have evidence afforded that scarcity of labor has been much less seriously felt than was at one time apprehended in the Upper Mississippi Valley.

Indian Corn, moreover, appears to have been sown on a scale slightly larger than in 1862, although the effects of a backward season are perceptible in its appearance which was very slightly below an average. In Vermont, Connecticut, Iowa and Kansas the crop was looking better than usual, but in Delaware, Maryland, Pennsylvania, Massachusetts and Illinois not so well.

Rye is a full average in its appearance, and rather over an average in acreage.

Oats are slightly below an average in appearance, and a small fraction above 1862 in acreage.

Thus we have the general result that an area fully equal or somewhat larger than in 1862 was sown of all the different grains. Potatoes show a similar result as to acreage, and a full average in prospect.

The extent of of Sorghum planted shows an increase of fully *one-half* on the very large crop of 1862. This is mainly a Western crop—Pennsylvania being the only Eastern state which reports an increase of much consequence. Cotton has been put in to an extent nearly eight times as large as last year in Illinois and slightly more in Kansas.

The Commissioner has also issued his second circular of inquiries—for the month of June. And although the responses obtained cannot in the nature of things arrive at absolute accuracy, the information derived from them can probably be depended upon, like the movements of the mercury in the barometer, as a guide to the expectations we may entertain as to the coming harvest. The May returns are taken too early in the season to indicate results as clearly as those of June will. We may suggest that the circular for July should urge the correspondents of the Department to acquaint themselves as fully as possible with the actual yield obtained at harvest in their respective neighborhoods, that they may have the best data within their reach on which to base the estimates submitted. It would be well also if the circulars issued had a blank of inquiry as to the general means of the reporter for obtaining information, or the extent of area his observations have covered; in order that in cases of conflicting returns, there may be some means of determining which are the most to be depended on. We hope to see in the fuller summary that is promised of the answers received, a statement of the number from each State or County who furnished the information requested.

☞ The thirteenth annual fair of the Vermont State Agricultural Society is to be held at Rutland on the 8th, 9th, 10th and 11th of September next. A Wool Growers' Convention will be held on the first day of the fair, before which an address will be delivered by Hon. Henry S. Randall.

☞ The New-Jersey State Fair is to be held this year, commencing Sept. 8th, on the grounds of the Passaic County Agricultural Society.

The Pennsylvania State Fair will take place at Norristown, Sept. 29, Oct. 2, with a liberal list of premiums.

The Agricultural Society of Colorado Territory will hold its First Annual Fair at Denver City, Sept. 17, 18, 1863.

The Illinois State Horticultural Society hold their next Annual Fair at the city of Rockford, Sept. 9-11.

The American Institute, New York, which has suspended its usual exhibitions for several years past, announce that a show will be held this year opening Sept. 27th, at the Academy of Music, 14th street.

The Montgomery County (Penn.) Agricultural Society will have a Spring Exhibition at Springtown, June 18th, when a trial of Mowing machines is to take place.

The Broome County Agricultural Society will hold its Second Annual Horse Fair and exhibition and trial of Mowing Machines, at Binghamton, on the 3d and 4th days of July. An advertisement will be found in another column, to which attention is directed. The regular annual fair of the same society is to be held Sept. 8–10.

☞ The Schuyler Co. Ag. Society holds its Fair at Watkins Sept. 24–26. Address by Col. B. P. Johnson.

The Cattaraugus County Fair is to take place at Olean, Sept. 22–24.

The Ulster County Fair is appointed at Kingston, Sept. 22- 24.

☞ The Queens Co. Fair is to be held at Hempstead, Oct. 1 and 2. John C. Jackson, President; John Harold, Sec'y.

The Herkimer Co. Ag. Society have determined to hold their Fair Sept. 23, 24, and 25—at what place is not stated; but we presume at Little Falls.

☞ We regret to learn by a letter from our friend J. L. DARLINGTON, Esq., of the sudden death of D. B. HINMAN, of West Chester, Pa., late President of the Chester County Agricultural Society. Mr. H. was a gentleman of wealth who was devoting the leisure of his maturer years to beautifying and improving a fine farm, and who had served with energy for several terms at the head of the efficient Agricultural Society of his county. Two years ago he kindly gave up the whole of his time for nearly a week to promote the objects of our visit among the farmers of his vicinity; and we were deeply indebted to him not only for the personal exertions he so cordially made to render the visit an agreeable and useful one, but also for much of the practical information we were enabled to gather. Mr. DARLINGTON writes, under date of the 13th:—"I am just preparing to join the managers of our Agricultural Society, in paying the last tribute of respect to our lamented President HINMAN, who died on Thursday last, from an attack of apoplexy. He received the stroke about a week ago, while out in the field with some friends looking at his Alderneys, and never spoke a word afterwards. The loss of such a man is a public calamity."

☞ Mr. H. A. DYER, Secretary of the "Association of Breeders of Thorough-Bred Neat Stock," sends us copies of its Short-Horn and Ayrshire Herd Records. The former of these we have already noticed. The latter—devoted to Ayrshires—contains the pedigrees of 79 Bulls and 217 females—including, we should think from hasty examination, a representation from many of the most prominent Ayrshire herds in the United States and Canada. As this is the first work of the kind on either side of the Atlantic, and as all are agreed as to the usefulness of such a record, it is earnestly hoped that those whose herds are not entered in it will make their entries in the next issue, so as to render it still more complete and perfect an authority as to the numbers and purity of the well-bred Ayrshires of the country. Mr. SANFORD HOWARD of Boston, contributes an introductory chapter, from which we may make an extract hereafter.

☞ The "Tobacco Fair" under the auspices of the Kentucky State Agricultural Society, the premiums offered at which we noticed some time ago, took place at Louisville, May 27th, as appointed. It was more than usually successful, attracting a large attendance and full competition. The first prize of $100 on Manufacturing Leaf was awarded to Mr. J. T. Wyatt of Ballard county; and this hogshead was afterward sold for the price, unprecedented in the history of the trade, we believe, of $150 per 100 lbs., or $1,867.50, thus exceeding by $260 the price obtained for a hogshead sold in March last, which we quoted at the time as the largest sum ever commanded by one hogshead of Tobacco in the United States. The second and third best hhds. went at a dollar a pound. We have not yet seen full details of the other sales; but the Louisville Journal says that "no proof, in addition to what is furnished in this report, is required to prove that Louisville is the best tobacco market in the United States, and is surpassed by few in the world."

☞ JOSEPH HARRIS, Esq., Editor of the Genesee Farmer, was elected President of the Monroe County Agricultural Society on the 23d ult., in place of H. G. WARNER, Esq., resigned.

A GOOD IDEA.—We learn from the Rochester Union that an effort is being made among the friends of improved agriculture in that neighborhood, to hold a great Wheat show in connection with the next Fair of the Monroe Co. Agricultural Society—offering large prizes in order to induce general competition, and opening the competition to other States and the British Provinces.

A committee has been appointed, consisting of M. F. Reynolds, Ezra M. Parsons and Joseph Harris, to solicit donations for the object. It is proposed to make the leading prize for the best 20 bushels of White Winter Wheat, $200; for the 2d best $100; these and other samples offered to be the growth of the year 1863, and of one variety, pure and unmixed. The prize to be awarded only to the actual grower of the wheat, and the wheat receiving a prize to become the property of the Society. Rochester is just the place for such an exhibition, and we trust the money may be raised to carry out the project.

DRAWING IN GREEN CLOVER.—We published some time since, a letter from H. C. STROMAN of Fairfax Co., Va., giving a statement of his experiment in drawing in green clover immediately after cutting, and without any drying. We question if this process could be successfully repeated, unless the clover stalks are quite coarse and nearly dry from ripeness. In allusion to this experiment, our correspondent, S. K. GROVER of Kittery, Maine, writes as follows—"I have stowed hay in the barn about half made in a ground mow, but it got very hot. There was a tunnel up through the centre of the mow, made by standing up four poles and bracing them apart. A man could crawl in under, and up through the mow into the top of the barn. I applied four quarts of salt per ton. The hay came out bright. I sold a part of it. One of my neighbors remarked that it was the heaviest hay that he ever saw. It was coarse northern hay, mowed one day and hauled in the next."

GRAPE ISLANDS OF LAKE ERIE.—The editor of the Sandusky Register has been visiting the Grape Islands of Lake Erie—a few years since, the resorts of fishermen only, but now the most successful vineyards in Ohio: Kelley's Island, the largest of all of them, has already reached a population of about 600, with some 600 acres in grapes, and a constant extension of the culture. South Bass, (Put in-Bay,) next in size to Kelley's Island, is also next in improvement and cultivation. The past five years have completely changed the whole face of the Island. With this spring's setting, probably about 120 acres will be in grapes, of which twenty-five to thirty will be in full bearing this fall. Middle Bass, about one third as large as South Bass, containing only five hundred acres, is also being converted into vineyards at a rapid rate. North Bass, about the size of Middle Bass, was, nine years ago, a complete wilderness. It now is settled by sixteen families, and the grape fever has fairly laid siege to the island. Quite a number of vineyards have been set out—some of them in full bearing—and others are being planted this spring.

VERY GOOD ADVICE.—"Don't forget the fodder corn!" says an exchange; "at the latter part of the season when the drouth shall make bare the pastures, the cows will need some nice bites at morning and night. These can be supplied in no way so cheap as from the patch of fodder corn. Put in half an acre and try it."

☞ Mr. L. A. ASPINWALL of Ireland's Corners, near this city, has invented and patented a Potato-Planter, a trial of which we last week witnessed. The potatoes are placed in a hopper, the bottom of which revolves horizontally, having traps at intervals near its outer edge through which one potato at a time passes, and is carried back until it drops into the furrow made by a plow attachment underneath the machine, when scrapers follow behind, covering the tuber at a proper depth. The whole operation is thus performed, as in a corn-planter, by once passing over the field. The openings in the hopper, and the speed at which its bottom is made to revolve, can be so regulated as to plant at eighteen inches, two feet, or a still greater distance apart. The distance as well as the depth of the seed are more evenly regulated than in the ordinary mode of planting by hand. By a slight modification the apertures can be adapted for potatoes of different shapes or sizes. We saw it tried with Peach Blows, as ordinarily selected for seed; they varied, as would naturally be the case where no extra care was used, very considerably in size, which however appeared to be no impediment to the regular dropping of the seed. If Mercers or varieties of similarly elongated form are planted, a greater distance is given in the drop so as to carry them through with equal certainty. There is considerable ingenuity manifested in the contrivance of this feeding apparatus. As it was found that dependance could not be placed upon the tuber's falling through a simple aperture, a short inclined plane attached by a hinge leads to the hole, along which the potato is sure to find its way; at the proper moment this rises to the level of the other sides of the hole, cutting off the pressure of the remaining potatoes upon the one that has fallen through, and a spring-roller protected from the contents of the hopper by a partition, strikes it so as to secure its dropping into the ground if inclined to stick when it ought to fall.

Mr. ASPINWALL has been for some time engaged in perfecting his machine, and hopes soon to be able to have it manufactured for general sale. The one which we saw at work being the first that has been constructed for operation in the field, may be found capable of farther improvement in practice, to lessen its draught, or otherwise simplify its action; but Mr. A. is confident that he has secured the right principle for a successful and practical planter, and that the general adoption of his invention is only a question of time. A machine which shall accomplish this object will be a great boon to the agricultural community, especially in the present scarcity of labor, and Mr. Aspinwall is deserving of much credit for the efforts he has made for its attainment.

☞ The care with which the English or Scotch farmer often weeds his growing wheat, has been alluded to in our columns, with the query why similar care might not here meet with its reward. A correspondent of the COUNTRY GENTLEMAN in Oakland county, Michigan, writes us as follows under date of the 18th inst.:

"Some attention is being paid to the hoeing of wheat between the drills, with horse power, this spring. In winter and spring wheat it has proved very beneficial for the last two years; they hoe eight or ten acres per day, or as fast as it can be drilled in—the cultivator being of the same width or space of our common drills. It has proved *to advance the crop full* 25 *to* 30 *per cent.* over that which has an equal chance in every respect except the hoeing. I would advise all farmers to try a little spot with pick or a broad hoe, and watch the results. Any farther information on the subject I will give with pleasure."

This advice as to trying the experiment is good, and we hope it will be followed by our readers, and that they will favor us with the results. We should be glad to hear farther on the subject from our correspondent, the remainder of whose letter will be found under our Weather Record.

PRODUCTION OF THE WEST THE LAST TWO YEARS.—The Cincinnati Gazette gives the following figures as showing the receipts of breadstuffs at four of the lake ports—Chicago, Milwaukee, Detroit, and Toledo—in 1862 as compared with the previous year:

	1862.	1861.
Flour, bbls.	5,415,059	4,138,736
Wheat, bush.	42,172,399	42,276,632
Corn, bush.	35,826,747	31,862,423
Other grains	7,112,507	1,976,249

Reducing flour to grain, the grand aggregate compares thus:

1862—Bushels,	112,181,848
1861— do.	98,819,504
Increase.	13,362,254

These figures give the surplus grain crops of only a portion of the West, showing an increase of about 13½ per cent. in 1862 over 1861. The number of Hogs packed during the season is stated as follows, at the principal points at which this business is transacted:

Season of 1862-3,	4,069,520
1861-2,	2,893,733
Increase,	1,175,787

Or "an increase of forty per cent. in number, being the largest crop ever produced in the country. Thus we have for our people and our armies, abundant supplies of bread and meat—two necessary elements to the prosperity of a nation and the conduct of a war."

☞ A new work on Sheep Husbandry entitled "The Practical Shepherd," by Hon. H. S. RANDALL, LLD., author of "Sheep Husbandry in the South," etc., etc., is announced as now in preparation and to be published in a few weeks by J. B. LIPPINCOTT & Co., Philadelphia, and D. D. T. MOORE, Rochester, N. Y. "The work is intended to give that full and minute practical information on all subjects connected with Sheep Husbandry which its author has derived from the direct personal experience of thirty-five years with large flocks, together with that knowledge of different modes and systems which has flowed from a very extensive correspondence during a long period with leading flock-masters in every part of the world." The "Practical Shepherd" will make a duodecimo volume of between 300 and 400 pages, illustrated with numerous engravings.

A BOY'S OPINION OF WORKING OXEN.—Boys and hired men generally dislike to drive ox-teams; but for my part, I would rather work them than to work horses. I have owned several pairs; and have broke a great many pairs for my father. I break them before they are two years old, and by being mild with them, they become gentle and agreeable to work, and are always ready for sale. They will do with one-half the grain that horses will, and considering the ordinary price you pay for spring calves and colts,—viz., $16 for calves, and $50 for colts—the price you pay for harness, repairing of harness, shoeing, &c., when they are both sold at five years old, you will find that the oxen have been the most profitable.

G. E. H.

Inquiries and Answers.

[Particular attention is invited to this column, in which Inquiries on all subjects within the scope of this Journal will find a place. While we shall continue to reply to such of them as circumstances will permit, we ask our readers to furnish any facts or experience which they may possess, in answer to the queries here proposed, whether we respond to them ourselves or not.]

FOUL IN THE FOOT.—What is the proper remedy or treatment for cows suffering from the foot-rot, and what the proper treatment for cows afflicted last year with the foot-rot in order to prevent them from a return of the disorder, and to improve their general condition? H. H. [For one remedy for foul in the feet, see the communication of Mr. CHAFEE, on page 280 of this number of this paper. Dr. Dadd recommends the following:

Tincture of Matico,	2 ounces.
Pyroligneous Acid,	1 pint.
Glycerine,	4 ounces. Mix.

Saturate a small piece of sponge with a portion of the above, and introduce it between the "cleft" of the foot; the hoof and contiguous parts are then to be bathed with the preparation; and finally, in view of keeping the sponge in place, and to produce a good effect on the external parts, a narrow bandage must be applied so as to encircle the hoof. If any heat or tenderness exist, the bandage should be kept moist with cold water.]

BONE PHOSPHATE.—I wish to know of you the best possible way to make bone phosphate for the least possible cost. I have heard of some modes, though they do not satisfy me as fully correct. I have not as yet noticed anything of that nature in the past, so please do me the kindness. Let me hear from you soon, with full particulars and proportions of every article per ton. J. M. A. *Harford Co., Md.* [The information asked for is precisely what many of our readers, as well as ourselves, desire much to obtain, but which, unfortunately, we do not possess. If some intelligent cultivator who is familiar with the different modes (or who may obtain them from our past volumes) would undertake a series of accurate experiments to determine these points, and would give us the results, he would confer a lasting obligation on many farmers]

SHEEP TICKS.—My lambs are nearly covered with ticks. Will you, or some one, advise me through the columns of the Co. GENT. My old sheep have been protected from the storms, well fed, and are in good condition. JOHN SCOTT. *Newfane.* [We can recommend nothing better than to shear the sheep as soon as practicable, and wash in tobacco water—if our readers can suggest a more effectual remedy, we shall be glad to hear it. It has been said that *good keep and feeding* would keep off the ticks, but experience proves that they have no objection to *fat* mutton, and that this alone will not suffice.]

MILLET.—I wish to inquire through the Co. GENT, which is the best to sow for fodder, Millet or Hungarian grass, and what the difference is? Also what soil is best adapted to raising it, amount of seed per acre, cultivation, &c. Mc. [There are many species and varieties of millet,—such as the common English or *Panicum miliaceum*, which grows in a panicle, like oats; the Italian and German millets, which grow in spikes, &c. The Hungarian grass is one of the best of the latter class. A good barley soil will raise Hungarian grass, but for the quantity of seed and details of cultivation, we would refer to such of our readers as have had experience.]

FATAL DISEASE IN CALVES.—My object in writing to you is to get information how to treat and cure a very fatal disease among calves, which hardly ever live 24 hours after first taken. Symptoms: The animal has a languid and sleepy looking appearance; in 3 or 4 hours becomes more restless, and evidently suffering much pain. By this time the animal will manifest lameness in one, and sometimes two legs. Now the pain is intensely severe—the animal moans, froths at the mouth and dies. On examination after death I find under the skin large spongy looking spots, mingled with blood, much resembling that of a very bad bruise. The food in the manyfolds is remarkably dry and in a hard cake. We know not the cause of this disease, or a cure for it. Will some of your readers please inform us what disease this is, and the cure for it?

Osage Co., Kansas. ABSALOM HOOVER.

ROOT HOUSE.—I would be greatly obliged if I could get from some of your correspondents their views with reference to the construction of a root house—how much above and below surface of ground—how thick the walls—whether the walls would be better if hollow—how ventilated, and whether it could be so arranged as to answer also the purpose of a pit for plants? J. B. J.

THE STATE FAIR.—As the time for selecting the grounds for the next Fair of our State Agricultural Society is near, cannot the board of directors be induced to condense the exhibition, and occupy less than half the territory they usually do? How many persons have we all heard complain of the great distance from one part of the exhibition to another. How many who attend the Fairs, do not see the whole at all, and how many others who would like to see it many times over, see it but once, in consequence of the unnecessarily large territory it is spread over. At the Society's last Fair at Watertown, I heard a venerable farmer who always attended the Fairs say—"If the New-York State Agricultural Society would once hold its Fair in a place where it could not get more than twice the land it needed to hold it upon, I would go a long way to attend the exhibtion." L. E. B. W. *St. Lawrence Co.* [The officers of the State Society never mean to call for more ground than is actually requisite for the purposes of the exhibition. At Watertown they were obliged to conform to the size and bounds of enclosures already existing; the area of the County Society's grounds alone being too small, and that of the trotting ground adjoined and also included, being perhaps unnecessarily large. At Rochester, last year, the grounds, even with the bad weather, were completely packed with visitors on Thursday, and, with fairer skies, would have actually proved, we think, *too small* for the convenience of the public. At Utica, this year, the grounds will be large enough to accommodate a very large attendance, but we trust not larger than the adjoining counties can readily fill]

GRUB IN HEADS OF SHEEP.—Last winter some owners of sheep applied to you for a remedy for grub in the head. Prevention is better than cure—that is, keep the sheep well during the summer when the fly is among them. If sheep are vigorous and strong, they will resist the attack of the fly. A few years ago we had in Otsego Co. a dry summer, and our pastures were very short, and our sheep thin during fly time. In the fall feed was good, and sheep went into winter in good condition—yet a great many sheep died during the winter, one farmer lost 300 out of 800. A. W. *Delaware Co.*

CHEMICAL POINTS.—Will some one of your "chemical" readers give us information upon the following points? Are the beneficial effects of gypsum on many soils due principally to a mechanical effect—the absorption of gases and moisture, or to the fertilizing qualities of its constituents? Is gypsum decomposed in the presence of nascent ammonia? Will not sulphuric acid be found in soils abounding in the sulphuret of iron, and would not lime be better than gypsum to apply to such soils? B. R. C.

CIDER VINEGAR.—I have several barrels of cider in cellar, which I wish to make vinegar of. Will some knowing one tell me the best way? JAS. A. McC.

GESTATION.—I have been looking over some old vols of THE CULTIVATOR, and find there is quite a lack of information in regard to the gestation of animals, such as the cow, and their treatment when in that state, and also the many ways to tell if they are in that state. E. C. W. *St. Johns, N. B.*

PRUNING THE GRAPE.—In training up fruit bearing canes of the grape, it has been the practice here, derived from German vine dressers, to pluck out the laterals with the view as they allege, of strengthening the buds from which the bearing branches of the following year are to be produced. Is this practice right or wrong, or is it a rule with certain exceptions, and what are they? I would be glad to have the opinion of any of your correspondents who have turned their attention to the subject. JOSEPH HENDERSON. *Mifflin Co., Penn., May* 27, 1863. [Experienced vine-culturists differ on this point—some insisting on the importance of the removal of these young laterals while others regard it of no consequence. Our correspondent can best satisfy himself by treating alternate rows in his vines, and for a few years according to these two modes—the results will be more satisfactory than any amount of mere theory.]

TREATMENT OF COWS.—One of your questioners wishes information about the mangement of cows, and as I know all about it, I will tell him. 1. What quality and quantity of feed is preferable before calving? [Good quality and small quantity.] 2. What immediately after? [None at all.] 3. Should a cow drink her first mess of milk? [A cow should not drink her first mess, or even her fifth mess of milk.] 4. What should be given to facilitate the after-birth? [Nothing in particular.] 5. How soon should it be taken away? [In about five minutes.] 6. What after-treatment? [Let the calf suck, and milk the cow, letting the milk fall into a swill pail, and from thence into the pig trough?] 7. What to prevent or cure milk fever? [Wash with cold water.] 8. What symptom would justify drawing milk before calving? [None at all.] L. W. RICE.

CULTIVATING ORCHARDS.—I usually keep my orchard under the plow. Do you think the trees would do as well if it was sown to buckwheat, letting the hens harvest it, and leaving the straw to fall down and rot on the ground? G. W. H. *Rochester, Mass.* [The answer to this question must depend somewhat upon circumstances. A young orchard on a moderately fertile soil should be kept well cultivated; grain crops and grass would much retard its growth. An old orchard, the roots of which run deep, is much less affected by any treatment of the surface. If the orchard alluded to is some years of age, the proposed management would probably answer well, and be better than most orchards receive.]

INJURY TO A HORSE'S FOOT.—I have a young and valuable mare, who about five weeks ago got her hind foot under the edge of the stall and skinned it a little. I did not think much of it at the time, but afterwards it swelled and there appeared to be a kind of soft substance growing on the bone beneath the skin. I have examined both Stewart's and Mayhew's books, but could find nothing about it, and if any of your numerous subscribers can tell me the cause or a remedy, they will oblige a YOUNG FARMER. [It is difficult to decide or prescribe in such cases without personal examination. The best treatment is probably cold water bandages in its early stages, and brandy and salt afterwards.]

RAISING HOPS FROM SEED.—I wish to inquire through your valuable columns, about the method of raising hops from the seed—1st. Can hops be raised from the seed? 2d. If so, when is the proper time of planting? 3d. How should the seed be treated, (if any treatment is necessary) before planting, to insure their germination? 4th. Where can seed be procured, and at what price per pound? An answer to any or all of the above questions by yourself or any one of the numerous readers of your valuable journal, who are hop raisers, will confer a favor upon A SUBSCRIBER. [Will some of our correspondents please answer the above inquiry.]

INDIAN CORN FOR GREEN MANURE.—I would like to know the best method of planting corn for the purpose of turning in when grown as a green manure—the quantity required for an acre and the best crops to follow it. Land dry and warm. C. D. *Woodstock, Vt.* [The corn should be sown thickly, or which would be better, planted in drills or furrows, so that a cultivator could be passed between the rows when the corn is about a foot high. Three bushels of seed will not be too much for an acre. If any of our readers have tried turning under green corn as a fertilizer, we shall be pleased to hear from them.]

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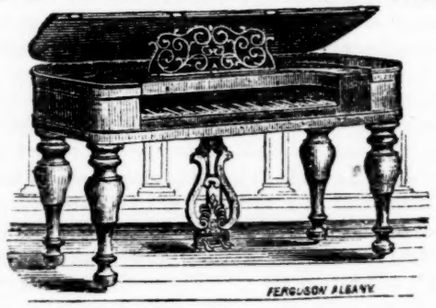

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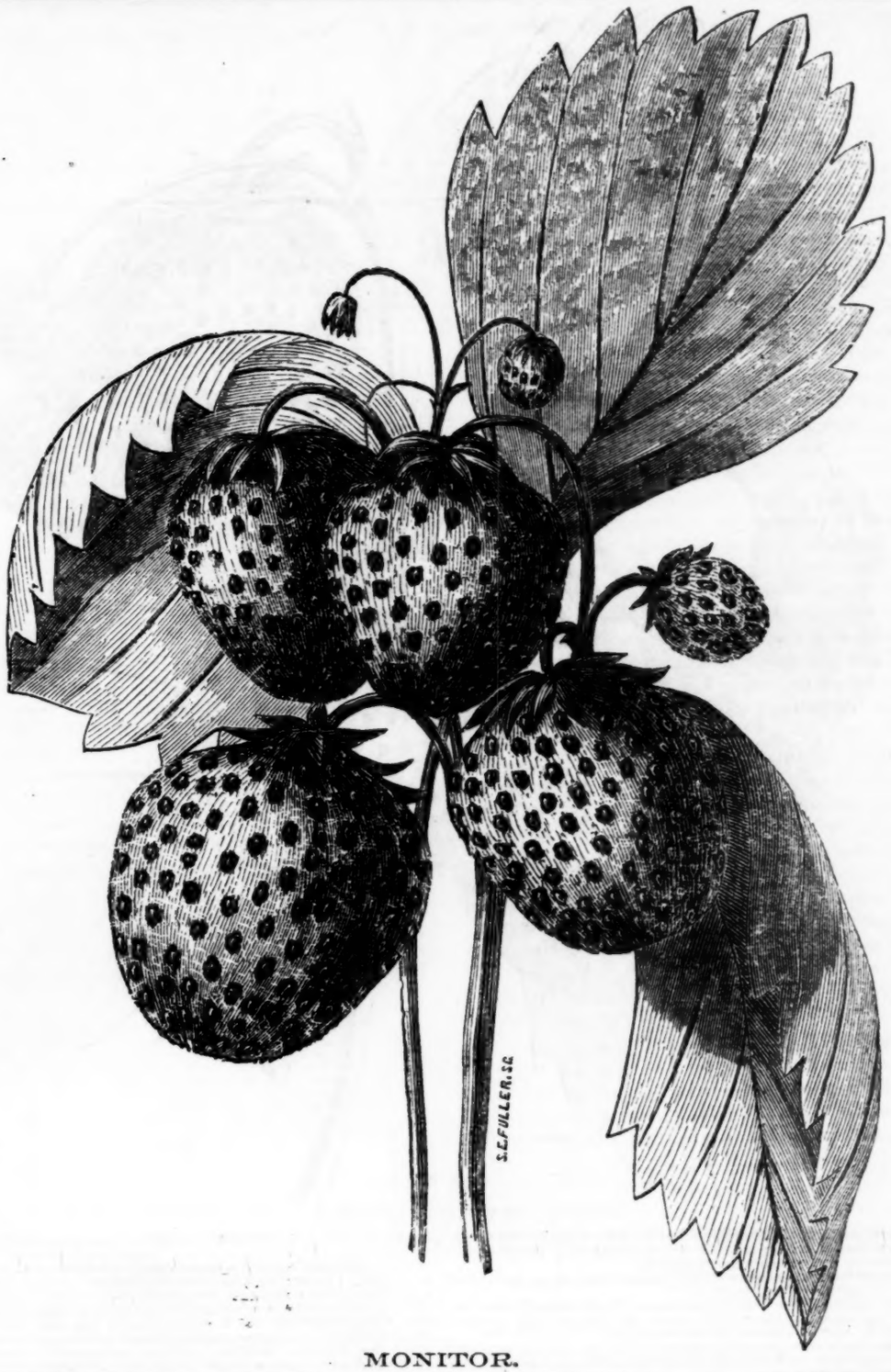


MONITOR.

THE TRIBUNE PRIZE STRAWBERRIES.

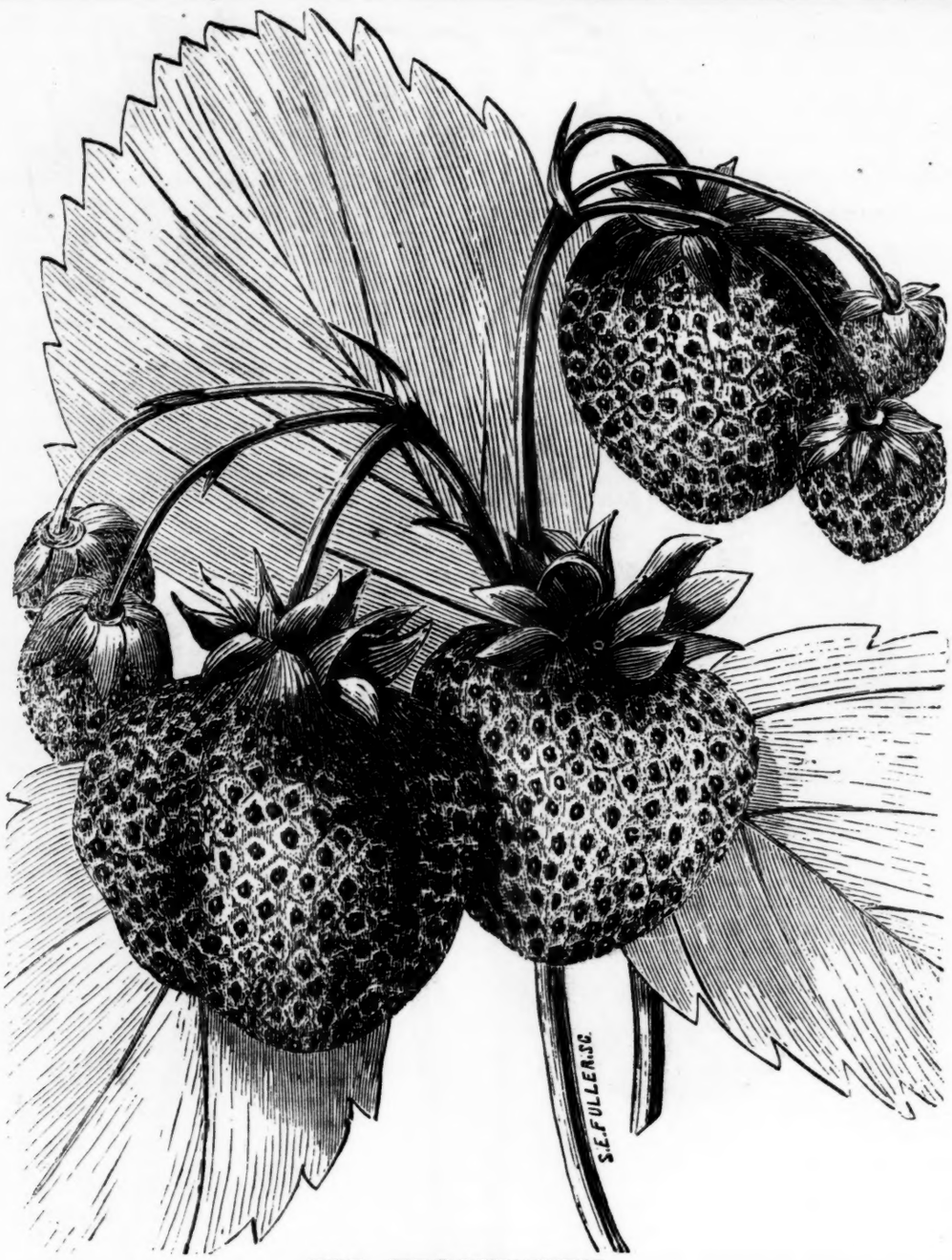
How they Originated—How they Look and Taste—Why they are Given to the Subscribers of the Tribune—When and to Whom they will be Distributed.

The cuts herewith presented represent

"THE TRIBUNE PRIZE STRAWBERRIES,"

so named because we purchased them at a very large price, to bestow EXCLUSIVELY upon the subscribers of either edition of THE TRIBUNE for 1863, intending to send one of each kind to every subscriber who expresses a wish to that effect at the time of subscribing. This will be equal to a prize of $1.50 to each subscriber, as that is the price charged by nurserymen for similar plants. Indeed, neither of these prize strawberries could be obtained at any price whatever, as we have secured every plant that can be produced in the year 1863, exclusively, as prizes to our subscribers. We have incurred the large outlay necessary for this purpose, because we have an earnest desire to see the propagation of improved fruit greatly extended, and because we believe that every one who receives the plants and grows the fruit will hold THE TRIBUNE in kindly remembrance for enabling him to enjoy such a good gift of a kind Providence, and will thereafter feel an increased desire to improve all the list of fruits. It is thus that health and happiness will be increased.

As these plants have all to be grown from the few plants that we bought of Mr. Fuller in the autumn of 1862, he will not be able to send them to subscribers until after the 1st of September, 1863, when they will be carefully packed in oiled silk or paper, and forwarded through the mail, at our expense, or by express at expense of the receiver. The three plants will be sent to each person who sends to us a year's subscription for either the Daily, Semi-Weekly, or Weekly TRIBUNE,



COL. ELLSWORTH.

indicating at the time of subscribing that he desires the strawberries, and the distribution will be made in the order the subscribers' names and requests for Strawberries are received.

Single subscribers will receive their plants by mail, done up in oiled silk, or other suitable oiled substance.

To Clubs, plants will be sent in packages, to correspond with the number of names in the Club; and where the number will warrant it, they will be sent by express, packed in boxes.

New subscribers who desire strawberry plants should say so at the time they send their money, as we do not intend to send any to those who will not appreciate them. They are too valuable to be wasted. There are parties who would gladly contract for the exclusive right to all these plants, at 25 cents a piece, and there are many subscribers who would not, as soon as they see and taste the fruit, part with their prize for a $5 "green back."

How these New Strawberries were Produced.

The following statement is made by Andrew S. Fuller, horticulturist, Brooklyn, the originator of these strawberries. He says:

"It is now between seven and eight years since I commenced sowing seeds of the strawberry for the purpose of producing new and improved varieties. I have always selected seeds from the largest and best that could be obtained, and the results were that I produced some few good varieties each season; yet they were not such as I was willing should go out as my seedlings. Every season I selected the seed with more care than I did the previous one, and found that I made constant improvement. I therefore determined that I would put forth extra exertions, and see if a few extra choice varieties could not be produced. In 1859 I obtained the best varieties known, and by fertilizing the flowers one with another, I expected to produce strawberries combining greater excellence than heretofore known. In this I was not disappointed. I produced that year many thousands of seedling plants, and the fruit of many was really excellent, so much so that I was urged not to throw the plants away; but as excellence and not variety, was my object, I destroyed all but the most promising. I determined from the first that no plant should go out as a seedling of mine unless it combined greater excellence than any other strawberry known. From the selections of that year a competent Committee from the Farmers' Club of the American Institute, who had the matter three years in charge, made a selection of three sorts, ripening early, medium, and late, and these I preserved as the final result of my seven years' laborious experiments to procure improvement in strawberries from seeds. These I intended to dispose of in the ordinary way of a nurseryman's business, and should have done so but for the desire of THE TRIBUNE to make a gratuitous distribution of these truly excellent strawberries to its subscribers. I have therefore contracted to furnish them exclusively for that purpose. Not one of them can be bought of me at any price. If I had kept them for sale to individuals, the price would have been 50 cents each, or $5 per dozen."

Names and Descriptions of the Prize Strawberries.

"The earliest ripening one was named COL. ELLSWORTH, in honor of the martyr who lost his life when Alexandria, Va., was first occupied by the Union army during the present war. It is a very large variety, of a crimson color, conical in shape, and having slight depressions running from calyx to point, resembling the sutures on the peach, with a long neck, and the calyx parts readily from the berry; quality good; flesh firm. Although the largest of the three, it is also the earliest, ripening at the same time as the Jenny Lind and Early Scarlet, and is very productive. The original plant, 18 months from the time the seeds were sown, produced over 200 perfect berries, averaging from 1 inch to 1¾ inches in diameter.

"The next ripening is called the MONITOR. It is very large, of a

BROOKLYN SCARLET.

dark bright scarlet color, approaching a crimson in the sun. Berry very solid and firm, of fine quality; plants very vigorous and productive. This sort will become a great market fruit, the color and shape being very attractive.

"The third, from its color and origin, is called the BROOKLYN SCARLET. Although this variety is inferior in size to the other two, yet it possesses merits that will always make it a great favorite. Its shape is a regular oblong cone, color the most beautiful bright scarlet. Flavor, the very best. We have the unanimous decision of the judges at the great Strawberry Show last season, at No. 41 Park-Row, New-York, on this point, as they awarded it the first premium over all its numerous competitors. The plant is a very strong and vigorous grower, making monstrous stools the first season, from which an enormous amount of fruit stalks are produced. Add to this its lateness, which assists so much in prolonging the season of this delicious fruit, and we have in this strawberry something as near perfection as possible, though not as large as the others. Yet this is not small, and among the sorts most cultivated, ranks medium to large."

The above descriptions of Mr. Fuller, in addition to all that we have already published, must be sufficient to satisfy all minds that we are offering no trifling prize to our subscribers, as an indication of our good will, and certainly with a hope of their continued good will to us.

We have only to add that the cuts are as exact represensations as to size as can be be given, and in no respect exaggerations of THE TRIBUNE PRIZE STRAWBERRIES.

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